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LETTERS

From the Surgeon General, USPHS

DEAR SIRS: Thank you for your letter of February 22, 1955 containing the resolution pertaining to the WHO drug programs which was adopted by the 1954 Annual Meeting of the AMERICAN SOCIETY OF HOSPITAL PHARMACISTS.

I am happy to receive this evidence of the support of the AMERICAN SOCIETY OF HOSPITAL PHARMACISTS for these WHO programs, and am grateful for the expression of appreciation to the Public Health Service. The interest which the various U. S. groups concerned with drugs are showing in these programs is helping to insure their successful operation. I know that in this connection the AMERICAN SOCIETY OF HOSPITAL PHARMACISTS will make an important contribution.

LEONARD A. SCHEELE, *Surgeon General*
Public Health Service
Dept. of Health, Education, and Welfare
Washington, D. C.

EDITOR'S NOTE: The resolution referred to in the above letter appeared on page 347 of the September-October (1954) issue of THE BULLETIN.

From Panama

DEAR SIRS: Enclosed herewith you will please find a bank draft in the amount of $4.50 covering a one-year subscription to THE BULLETIN OF THE AMERICAN SOCIETY OF HOSPITAL PHARMACISTS.

I have received several issues and consider your publication very interesting and valuable to the profession.

LUIS C. ROQUEBERT, *Pharmacist*
Panama, Republic of Panama

Placement Service Helpful

DEAR SIRS: The position of Staff Pharmacist in our hospital has been filled so you may remove our name from the list of positions open.

I wish to express my sincere appreciation to the Division of Hospital Pharmacy for the Placement Service which is available. Thank you very much.

NEAL W. SCHWARTAU, *Pharmacist*
Rochester Methodist Hospital
Rochester, Minnesota

Appreciates Bulletin

DEAR SIRS: . . . I have benefited from my membership in the SOCIETY and especially from THE BULLETIN which I believe is the best publication available to practicing pharmacists.

RICHARD M. COX, MSN, USN
U. S. Naval Hospital Corps School
San Diego, California

From Texas Society

DEAR SIRS: The Texas Society of Hospital Pharmacists at its annual meeting in Austin on February 19 and 20 passed the following resolution:

Whereas the AMERICAN SOCIETY OF HOSPITAL PHARMACISTS provided the opportunity for President George F. Archambault to visit the Society at the time of its annual meeting, therefore

Be it resolved that this Chapter extend to the national SOCIETY its appreciation and thanks.

Jean Michaels, *Secretary*
Texas Society of Hospital Pharmacists

Benefited from Membership

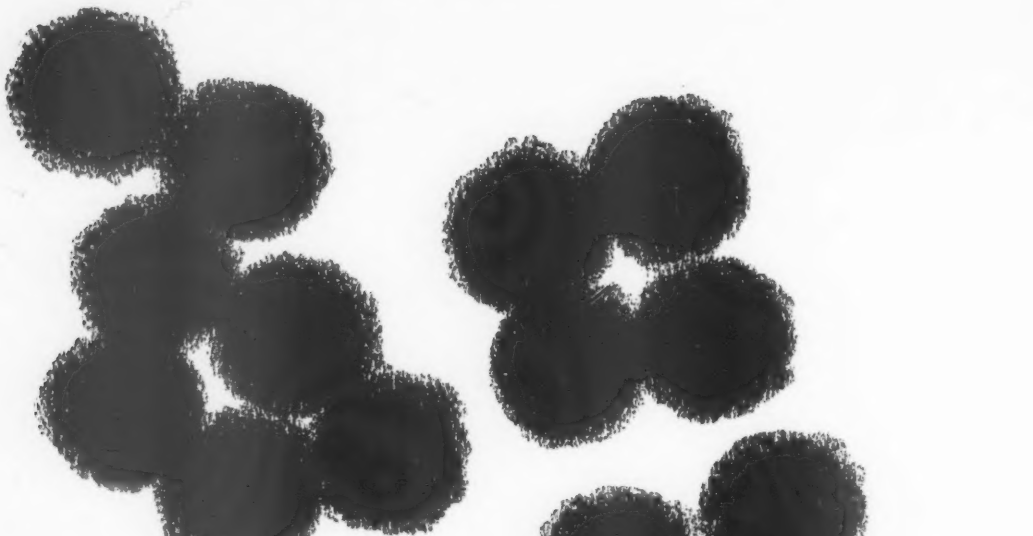
DEAR SIRS: It is with much regret that I am asking that my name be removed from the membership role of the ASHP. On the first of January, 1954, I officially opened my present business, the Professional Pharmacy . . .

Being a Charter Member of the ASHP, I have benefited much from my membership, especially as related to the useful information presented in THE BULLETIN. Keep up the good work.

HUNTER L. KELLY, *Pharmacist*
Durham, N. C.

DEAR SIRS: I am retiring as Chief Pharmacist at Crouse Irving Hospital on February 12. . . . Your SOCIETY has been a great boone to me in the fourteen years I have been in charge of this hospital pharmacy. I have been a member nearly as long as the ASHP has been in existence and have received much benefit from THE BULLETIN. . . . I shall keep my membership in the SOCIETY whether I work or not. Thanks for everything and good luck to the SOCIETY.

HERBERT G. WRIGHT, *Chief Pharmacist*
Crouse-Irving Hospital
Syracuse, N. Y.



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*Pratt, R., & Dufrenoy, J.: Texas Rep. Biol. & Med. *12*:145, 1954.

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EDITORIAL

Lessons from Abroad

by DON E. FRANCKE

With the coming of the Sixteenth General Assembly of the International Pharmaceutical Federation in London next September it may be timely to indicate a few of the lessons which American pharmacy may learn from abroad.

Let us consider first hospital pharmacy. When one visits a hospital pharmacy in France, Holland, Switzerland, Germany, and some other European countries, one can note numerous items of unusual interest. For example, the pharmacy at the Municipal Hospital of The Hague is outstanding in many respects. One is impressed with the quality of pharmaceutical service and with the high caliber of the pharmacy staff. With seven Ph.Ds and about thirty other personnel in the department it ranks among the best in the world. The pharmacy has its own library, complete with a stained glass window, with a librarian devoting full time to her activities. The pharmacy library and medical library of the hospital exchange abstracts of articles from all over the world. The pharmacy also employs an I.B.M. machine for pricing and recording all prescriptions and other business activities of the department. All non-routine biological tests and determinations for the hospital are done in the pharmacy. The control and manufacturing facilities of the pharmacy are excellent. This pattern of pharmacy service rendered by highly educated and trained personnel is duplicated in numerous other hospital pharmacies on the Continent.

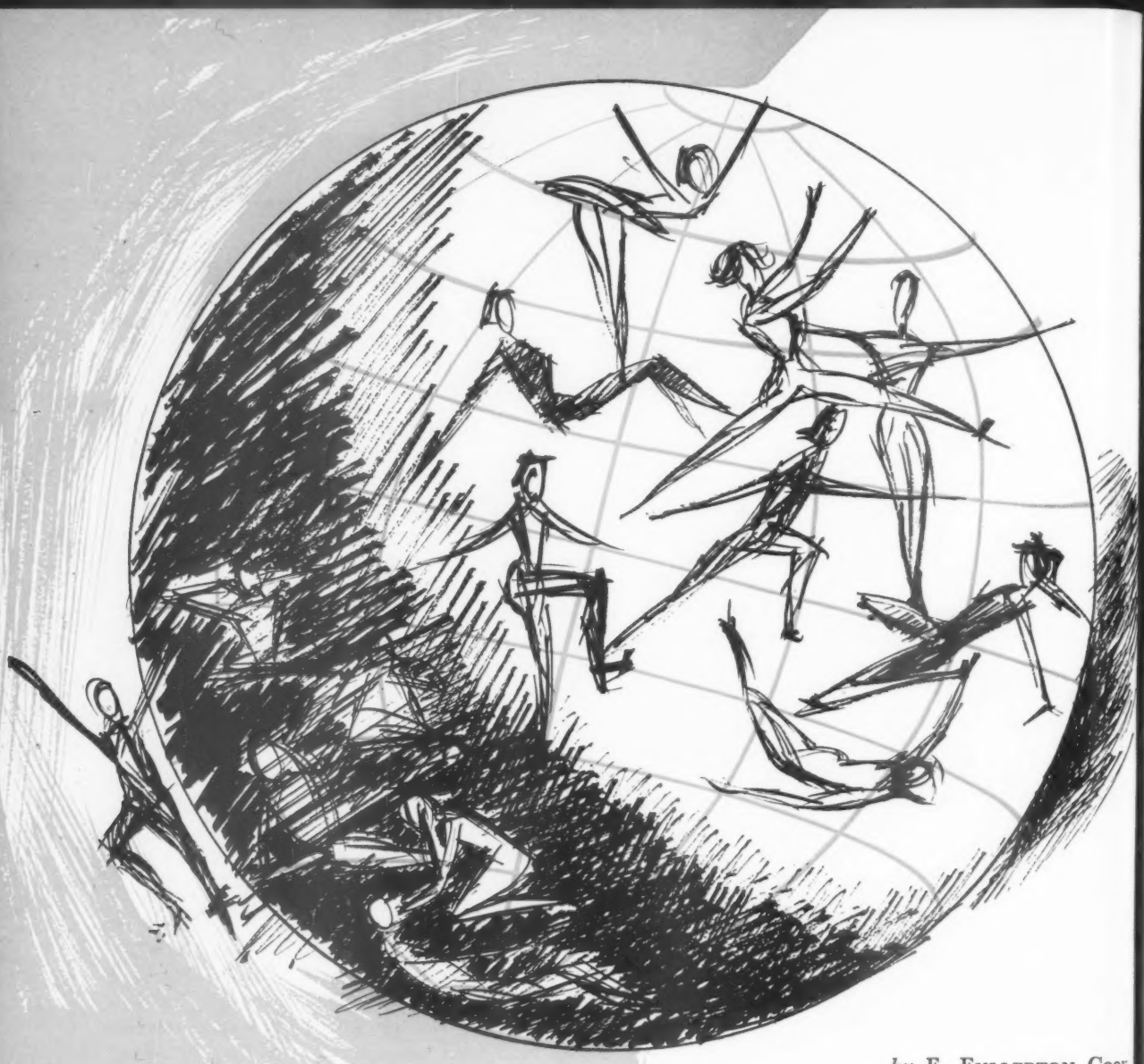
Hospital pharmacy internships are now a subject of wide interest in the United States. While our internship programs began during the early thirties, those in France were in existence almost 100 years before that time. There is an extensive program for the training of hospital pharmacy interns in France and competition is keen among pharmacists for hospital positions. The French pattern of education and training of hospital pharmacists has been remarkably effective and the French hospital pharmacist occupies an unusually high place in pharmacy. At the University of Paris approximately fifty percent of the teachers in the School of Pharmacy have been recruited from among hospital pharmacists. The Dean of the school of Pharmacy, Dr. René Fabre, is also a former hospital pharmacist. Dr. Jean Cheymol President of the F.I.P. Section of Hospital Pharmacists is not only Chief Pharmacist at Tenon Hospital but also Professor of Pharmacology in the School of Medicine of the University of Paris. The education and training of the French hospital pharmacists is such that essentially all Clinical Laboratories in French hospitals are under the direction of the pharmacist.

Turning to pharmacy in general, we have many lessons to learn from European pharmacy. For example, in matters of ethical regulation of the profession we have nothing which compares in organization or effectiveness to the Statutory Committee of the Pharmaceutical Society of Great Britain or to the Disciplinary Council of L'Ordre National des Pharmaciens of France. In these countries, and others as well, we have examples of real self-discipline of the profession supplementing legal control. Had we in the United States exercised similar self-discipline and had we acted with greater responsibility in the distribution of certain medicines we would not be faced today with the serious challenge of diversion of these drugs to other outlets. Also, there was a time when American pharmacy did not accept as a norm the great variety of sidelines accepted today. A more unified and self-disciplined profession would never have allowed these things to pass.

European pharmacy also offers us a lesson in the legal separation of pharmacy and medicine. This, of course, is one of the conditions which has made European pharmacy so strong and has fostered a long tradition of professional service among European pharmacists. It has, in effect, permitted European pharmacists to devote essentially full time to professional activities.

Although we appreciate the numerous pitfalls inherent in attempting to draw parallels or comparisons in pharmacy as practiced in different countries with varying social and economic conditions, it nevertheless appears that American pharmacy could learn many lessons from abroad. Armed with a more intimate knowledge of some of the possible directions for future development of our profession we could more intelligently guide American pharmacy toward goals which would be better for the public and for the profession. The resulting American pattern would not necessarily follow the European pattern of practice but we should be able to select desirable basic principles and adapt them to our own needs.

Hospital pharmacy in America is now in an important phase of its development. It is now in the process of evolving new patterns of education and training and developing advanced concepts of pharmaceutical service in hospitals. In shaping our ultimate objectives we have much to learn from European hospital pharmacy. Furthermore, we believe that American pharmacy as a whole could also profit by a closer study and analysis of pharmacy abroad.



by E. FULLERTON COOK

THE CODES OF ETHICS upon which the health professions have been built, have had, through the centuries, but a single objective, namely that all peoples of the earth may eventually be freed in so far as possible from the pain and distresses of disease. Physicians and all members of the associated health groups have been dominated basically by a sense of responsibility for the welfare of humanity. This powerful, moral force had its inception in religious practices throughout the world.

The revolutionary changes in world thinking within the past few years clearly point to but one ultimate result. While the way has been rough and no easy path lies ahead there are many evidences that a new world order is coming.

The realization that it is possible for some people to have most of the good things which this world has to offer, including food, clothing, homes, education, the luxuries of every-day living, and health, in an atmosphere of freedom, has spread to the remote corners of the world.

Is it surprising that in countries, where for centuries, there has been oppression, poverty, hunger, and disease that this good way of life has become not only a dream but a demand?

In recognition of these facts, after the bitter experience of two world wars, most of the nations of the world united in an international organization which, it was hoped, would make this demand a reality everywhere.

While the United Nations has not accomplished all of its objectives within its first decade of exis-

E. FULLERTON COOK, a member of the International Commission of Pharmacopoeial Experts from 1937 to 1954 and Chairman of the Committee of Revision of the *United States Pharmacopeia*, for nearly forty years, is now Honorary President of the American Pharmaceutical Association and the Senior Editor of *Remington's Practice of Pharmacy*.

THE INTERNATIONAL PHARMACOPOEIA

its evolution and its role in world health

tence, many of its divisions have obtained almost miraculous results in areas where the need was great.

The World Health Organization, an agency of the U. N., is an outstanding example of the benefits which may come to the world when the knowledge and skills available today are given an opportunity to help those in need, always in the spirit of service back of the health professions.

The Pharmacists' Role

The pharmacists' part in the WHO program has been in the field of therapeutics, specifically in an attempt to insure efficiency and uniformity for the medical and surgical supplies needed for the prevention and cure of disease.

To provide this essential element in the WHO program this international organization took the necessary steps to give reality to a long cherished dream of physicians and pharmacists, namely a book to suggest adequate standards for the purity and strength of the therapeutic agents, now considered essential by world medical opinion.

This division of WHO has worked intensively on this project since its organization in 1947 and has completed one volume of what is known as *The International Pharmacopoeia, Volume I* and will soon publish a second volume and an addendum. The Committee is already working on a revision of the standards of volume I and II so that a combined second edition may be released at a not-too-far distant date.

An historical review of the long struggle to accomplish an international agreement upon uniform and essential standards for medicinal agents having worldwide recognition, will indicate the difficulties involved and emphasize the credit due WHO in giving reality to this long anticipated program.

No one today questions the necessity for proper standards for essential therapeutic agents. For centuries, even back to the lists and descriptions of drugs and the formulas used in medical practice in the Egypt of 1550 B.C. as recorded in the Eber's Papyrus, physicians and their apothecary associates have been compiling formularies, dispensatories, pharmacopeias and like records as a guide to the health professions. These records, however, were intended mostly for local use although some of this knowledge influenced world medical practice for more than a thousand years. Later these publications by medical schools, or by the doctors and apothecaries of a city, became national in character and have so continued.

Development of Uniform Standards

The time came, however, with the development of trade and travel, and an increased sense of international health problems and needs, when thought turned to international uniformity for commonly used medicinals. A specific proposal for the establishment of world standards goes back at least eighty years, when a group of European pharmacists met in conference in 1874.

Out of this conference developed an International Pharmaceutical Congress which held its seventh meeting at Chicago in 1893, during the World Columbian Exposition.

Professor Joseph P. Remington was Chairman of that Congress, and one of the most important items on the agenda was the promotion of an international pharmacopeia. A speaker at the Congress is reported to have said "this project has been discussed at two previous meetings of this international body, one at Paris and another at London, and it is time something is accomplished." That was 61 years ago.

Published reports of the meeting list various resolutions passed by the Congress, among them the following:

Resolved that the Congress appoint a committee of three to take the necessary steps for the appointment of an International Pharmacopoeial Commission to compile, publish and distribute an International Pharmacopoeia of Potent Remedies. The Commission shall consist of one member from each country represented at this Congress, and other countries as decided by the Committee of three.

Resolved that this Congress accept with thanks the proffer of the American Pharmaceutical Association of $1,000.00 to help defray the expenses of compiling, publishing and distributing an International Pharmacopoeia of Potent Remedies.

As a personal assistant to Professor Remington from 1900 to the time of his death in 1917 it was my privilege frequently to hear him discuss this proposal in which he was deeply interested.

Professor Remington recognized the difficulty of obtaining an international agreement on all of the usual items contained in pharmacopeias, and therefore strongly advocated the inclusion at the beginning of only the more potent drugs.

He was also convinced that no international pharmacopeia, no matter how well prepared, could obtain adoption, *per se,* by any of the nations who already possessed their own pharmacopeia. He therefore insisted that, to obtain international uniformity, suitable standards must be proposed by a committee of pharmacopoeial experts who were fairly representative of the medical knowledge and pharmaceutical practice of many nations, and that the standards be published by an international authority. When these proposed standards became available they must receive voluntary adoption in the various national pharmacopeias if they were to gain international application.

It is interesting to note that these fundamental principles, advocated by Professor Remington, more than fifty years ago, were adopted by the Assembly of WHO, on the recommendation of the International Pharmacopoeial Committee and are so stated in the Preface of Volume I.

With these principles well established, and supported and pushed by members of the International Pharmaceutical Federation, the Belgian Government invited the Governments of the world to send delegates to attend an International Conference for the Unification of Potent Remedies to be held in Brussels in 1902. Invitations went directly to Governments but, as the *U. S. Pharmacopoeia* was independent of governmental control, Professor Remington, then the Chairman of the U.S.P. Revision Committee, was consulted and he, with the approval of Washington, appointed two delegates to represent the United States. These were Dr. Horatio C. Wood, Sr., then President of the U. S. Pharmacopoeial Convention, who happened to be in Switzerland, and Dr. Frederick B. Power, then associated with Burrows, Wellcome and Co., in London. Both of these U. S. delegates attended what is now commonly called "The Brussels Conference," at which about 26 nations were represented.

The Conference made a number of important recommendations and proposed their consideration by the Governments of the participating nations, and suggested official ratification at a later date. The ratification was carried out in 1906, most nations approving.

Effect of the U.S.P.

The Eighth Revision of the *U.S.P.* was then under way, with Professor Remington serving as the Chairman; he and the Revision Committee were in full sympathy with the basic idea of international uniformity and, as the proposals seemed practical and desirable, most of them were adopted by the *U.S.P. VIII.* Thus our *Pharmacopoeia* became the first national pharmacopeia to adopt the major recommendations of the 1902 Brussels Conference.

The most outstanding change thus made in our *Pharmacopoeia* was in the strength of tinctures and arsenical preparations. The Brussels Conference proposed a 10 percent (W/W) strength for all tinctures of potent drugs and 20 percent (W/W) for the non-potent. Prior to that time the U.S.P. Aconite Tincture was 35 percent, Veratrum Tincture was 40 percent, Cantharides, Capsicum, Musk and Strophanthus were 5 percent, and the Tinctures of Digitalis, Belladonna and Opium were approximately 15 percent. These were all now made 10 percent W/V, for all practical purposes the therapeutic equivalent of W/W.

The arsenic preparations then in use varied from 0.1 percent to 4 percent. All official arsenic preparations were now made 1 percent.

The Eleventh International Pharmaceutical Congress was held at The Hague in September of 1913 and Professor Remington and Professor Julius A. Koch attended. Professor Remington presented a paper at that time on "An International Pharmacopoeial Bureau" and again emphasized the importance of establishing international standards for potent drugs.

On adjournment the Brussels Conference recommended another similar international meeting to consider additional international standards, to be held in St. Petersburg in 1914. The First World War, however, interfered with this plan and it was not until 1925 that another step was taken to further the program. Again the Belgian Government issued invitations for an international conference on the unification of pharmacopoeial standards, to be held in Brussels. The U. S. invitation went to our Government, and our Pharmacopoeial Committee was consulted by the officials in Washington and Dr. A. G. DuMez was sent

as the representative of the Government and the U. S. Pharmacopoeial Convention. Dr. DuMez carried to the Conference an extensive list of recommendations from the U.S.P. Committee of Revision of which he was a member and on his return presented a detailed report of the proceedings, and recommendations. These were published in the A.Ph.A. *Journal* of 1925, pages 1077 to 1085.

These proposals covered many items including chemical assay methods for fourteen vegetable drugs, proposed reference standards for biological assays, suggested standards for the preparations of twenty-three additional potent drugs, approved the adoption of biological assays when chemical assays were not available, proposed a number of titles for drugs in international use, etc.

Committee of Pharmacopoeial Experts

But probably the most important action taken at the 1925 Brussels Conference was the establishment of an "International Secretariat on Pharmacopoeias" and a request to the Health Division of the League of Nations, then functioning from Geneva, to appoint a Committee of Pharmacopoeial Experts to prepare and publish an international pharmacopeia under the authority of the League.

While studying in Europe in 1926 and 1927, immediately after the publication of the *U.S.P., Tenth Revision,* the opportunity was given to me to discuss this proposal with the medical group at the League headquarters in Geneva and also with pharmacopoeial authorities in Switzerland, England, Holland, France and Germany. All were enthusiastic supporters and promoters of the plan but, at the time, the League officials believed the cost of setting up a permanent organization for this purpose was prohibitive.

However, a specific Article in the Charter of the League of Nations gave approval of this objective and finally in 1937, after many requests from pharmacopoeial authorities in member nations, a technical Commission of Pharmacopoeial Experts was authorized.

The members of this Commission were appointed by the Health Division, with the approval of their Governments, but a specific provision emphasized that they were not representatives of any one nation but selected solely because of their qualifications and experience in modern pharmacopoeial production.

The first meeting of this Commission was held at Geneva in 1938 and a second meeting in 1939, resulting in tentative agreements on standards for a number of widely used therapeutic agents but the Second World War interfered with other meetings except one called in 1944, in London, to establish standards for penicillin.

With the discontinuance of the League of Nations the preparation of an international pharmacopeia was temporarily stopped. After the War, when the United Nations was created, and under it the World Health Organization, one of the first steps taken was the reorganization of the pharmacopoeial program.

In 1947 an "Expert Committee on the Unification of Pharmacopoeias" was appointed, including some of the original members. A permanent Secretariat on Pharmacopoeias was also established at the WHO headquarters in Geneva.

First International Pharmacopoeia

This Committee held meetings twice a year thereafter, and in 1951 published the first Volume of the first *International Pharmacopoeia.* Volume I provides standards for about two hundred basic drugs but, only a few preparations. Standards for the latter and for a number of the newer medicinal agents, notably the antibiotics, were not in final form when Volume I was published and were left for Volume II or possibly even a third volume. If the assembly had not adopted the policy of publishing the available texts in sections as ready, a specific appropriation for printing and binding would have been lost.

In the preparation of standards the Committee first selected the items and preparations believed sufficiently important for international recognition. Each item was then referred to a qualified member of the Committee for the drafting of a text. The first draft of a text was then supplied all members in mimeographed form and comments invited.

These tentative texts, as received in the U.S.P. office, were carefully reviewed, with the help of specialists who were responsible for similar texts being written for the *U.S. Pharmacopeia.* All suggestions and criticisms, from every source, were referred to Geneva and published in the official WHO Circulars and later were individually considered at the next meeting of the entire Committee. The galley and page proofs of both Volume I and Volume II were similarly handled as the work of the Committee advanced and when Volume I was in final form, the possibility of submitting all proposed texts to experts in all nations belonging to WHO, eighty-one in all, was seriously considered. However the practicality of this was questioned at the time and an alternative was proposed, namely that, after the publication of Volumes I and II and possibly a third volume, of the first *International Pharmacopoeia,* an invitation would be sent to the governments of all member nations inviting criticisms, comments and suggestions. These would receive consideration

in an early revision which it was anticipated could appear in 1955. It was hoped that this policy would produce the "Second International Pharmacopoeia" which would truly represent world opinion and justify the adoption of its standards in many national pharmacopeias.

Volume I, in English and French, was released in 1951 and most of the text of Volume II was then in galley. The printing of Volume II, however, has been delayed at the request of U. S. pharmaceutical groups meeting as the Drug Trade Conference, in order that they also might have the opportunity to review the proposed standards. This was approved by the WHO authorities and was made possible by the reproduction and distribution, by the A.Ph.A., of copies of galley proofs of Volume II to all who requested it. In the meanwhile, taking advantage of this delay, similar proofs were sent to governmental authorities in all member nations, inviting comments or suggestions. A few suggestions have been received from all of these sources by the Secretary of the Committee in Geneva, and will be considered by the Expert Committee.

Thus the Volume II text has had a truly world preview, a policy which has been found to be practicable and it is hoped will be followed in the future for all editions of the *International Pharmacopoeia.*

The financing of English, French and Spanish editions of the *International Pharmacopoeia* will be by WHO, with the hope that its sales will eventually cover its cost. WHO has also authorized translations by other nations, but under WHO supervision, and a German edition of Volume I will soon appear. The Spanish edition of Volume I is also promised soon.* As the WHO program developed the earlier Committee of seven pharmacopoeial experts was expanded and an "Advisory Panel" of at least thirty specialists, from seventeen countries was appointed. These are experts in particular subjects and contribute information by correspondence or by attendance at sessions of the main Committee.

The preparation of texts for the *International Pharmacopoeia,* however, is not limited to contributions from these appointees; assistance and advice comes from many other sources including the International Union of Pure and Applied Chemistry, The International Organization for Standardization, The World Medical Association, the International Pharmaceutical Federation, and other divisions of WHO, such as the groups studying malaria, tuberculosis, venereal diseases, plague, etc., also a large number of other specialists located in strategic points throughout the world. The details of some tests for identity or purity or some assays, incorporated in various national pharmacopeias, may differ in minor points. To meet differing conditions, but the maintenance of equal quality, purity and strength for essential drugs is the primary objective.

*EDITOR'S NOTE: The Spanish edition of the *International Pharmacopoeia* has now been published.

American Concern

Concern has been expressed in this country, from time to time, that the *International Pharmacopoeia* might eventually supersede our own *United States Pharmacopeia.*

Such a possibility, in my opinion, is entirely unfounded for many reasons:

1. The contents of an international publication will never conform in entirety to the basic principles for admissions written into the Preface of the first *U.S.P.* in 1820 and well established today, namely that each revision shall recognize only those medicinal agents, and their dosage forms, considered at the time of the revision or when supplements are published, to be the most efficient and important. This decision is to be made by a committee composed of leading medical authorities in this country aided by panels of specialists in all important divisions of medicine.

This makes the *U. S. Pharmacopeia* a therapeutic guide to the medical profession of the United States and insures their interest and support.

2. The physicians and pharmacists of the United States would never forfeit their right and authority to decide the selection and the standardization of methods for the medicines considered essential for the best medical treatment in any one period. This is equally true of many other nations who take pride in their own pharmacopeia and enthusiastically cooperate in periodic revisions.

3. The research and developments in medical and pharmaceutical practices in each individual country, stimulated and financed by that country, are freely made available for consideration and possible adoption by the international organization. For WHO to establish its own laboratories and employ an adequate research staff to provide this freely given information, would be foolish and financially prohibitive.

A Humanitarian Program

How can we in the United States fail to cooperate in every way with this unselfish effort to improve the medical and pharmaceutical practice of the world? We are under no coercion, our help is voluntary, our adoption of the standards proposed is entirely optional. We have the opportunity here and now to do our small part in this humanitarian and terribly needed program, looking to the control of disease, with its attending suffering and economic loss, throughout the world.

THE USE OF ANTITHYROID DRUGS AND RADIOACTIVE IODINE

by J. G. RODARTE, M.D.

IN THIS CENTURY of atomic energy and increasing force and speed, there is a proportionate increase in our pace of living with a resulting increase in the wear and tear of our body. Likewise, in the sequence of modern living, we are

J. G. RODARTE, M. D. is with the Department of Internal Medicine of the Scott and White Clinic, Temple, Texas.

Presented at the Seventh Annual Seminar for Hospital Pharmacists, Austin, Texas, February 19 and 20, 1955.

subjected to daily emotional stress and strain. It is a well established fact that stress and strain alter the normal function of the body and that some organs are more vulnerable than others. The thyroid gland, when subjected to physiologic stress and strain, undergoes a pattern of histologic change which produces certain corresponding clinical phenomena and disease.

This discussion will be limited to my observations of the use of the antithyroid drugs at the Scott and White Clinic. The antithyroid drugs are indicated primarily in the treatment of hyperthyroidism. Radioactive iodine (I^{131}) also is indicated in some selected patients with carcinoma of the thyroid.

There are many different classifications of disorders of the thyroid; however, because of its simplicity and uniformity, we prefer the following:

DISORDERS OF THE THYROID

Classification

I. Goiters due primarily to extrinsic causes
   A. Iodine lack goiters
      Diffuse non-toxic goiter
   B. Goiters due to goitrogens
      1. Food (struma cibaria)
      2. Medicine (struma medicamentosa)

II. Diffuse toxic goiter (Graves' disease)

III. Nodular toxic goiter (Plummer's disease)

IV. Thyroiditis
   A. Acute
   B. Subacute
   C. Chronic
      1. Hashimoto's thyroiditis
      2. Riedel's struma

V. Neoplasms
   A. Benign (nodular non-toxic goiter)
   B. Malignant
      1. Adenocarcinoma, papillary type
      2. Adenocarcinoma, follicular type (alveolar)
      3. Adenocarcinoma, mixed papillary and follicular
      4. Malignant adenoma
         a. Papillary adenocarcinoma
         b. Follicular adenocarcinoma
         c. Mixed papillary and follicular adenocarcinoma
      5. Hurthle cell
      6. Anaplastic carcinomas (include carcinoma simplex, giant cell, squamous cell, fibrosarcoma and lymphosarcoma)

VI. Hypothyroid states
   A. Myxedema of adults (Gull's disease)
   B. Myxedema of children
   C. Cretinism, endemic, sporadic
   D. Cachexia struma privia
   E. Pituitary myxedema (a variety of Simmonds' disease or pan anterior hypopituitarism)

VII. Anomalies

Prior to 1941, the treatment of hyperthyroidism was strictly surgical. Because of the high surgical mortality rate and continued postoperative complications, medical therapies were tried one after another. Iodine had been recommended with reported success in the treatment of hyperthyroidism by Trousseau in the nineteenth century; however, because of fear of causing acute hyperthyroidism in patients with iodine-deficient goiters, the so-called iod-Basedow's disease, iodine therapy generally had been avoided and discarded. In 1923, Plummer, of the Mayo Clinic, reintroduced iodine, and its use became widespread. It was found, except in those few patients whose goiters were already replete with iodine, to bring about an amelioration of the hyperthyroidism.

Rawson and co-workers, in 1945, suggested a twofold action of iodine in the biosynthesis of the thyroid hormone. Iodine has both an involuting and iodinating or nutritive function. Iodine causes involution of the thyroid by inhibiting excessive production of thyrotropic hormone by the anterior pituitary, thereby preventing undue goiter formation. Secondly, in the process of biosynthesis, iodine provides the material with which to bind the amino-acid molecule, tyrosine, by means of the oxidative enzyme in the thyroid. Thus, in patients with hyperthyroidism treated with iodine, an anatomic reversal of the disease process takes place; and physiologically, with the storage of colloid in the gland, a decreased secretion and drop in metabolic rate is noted. The minimum dose of iodine which will produce the full response is about six mg. per day. Larger doses are given routinely, as there is no objection to doing so, and the risk of inadequate therapy is eliminated. Lugol's solution is the most satisfactory way of giving iodine therapy.

After 1923, the use of iodine for hyperthyroidism provided a tremendous boost to surgical therapy. The iodine-induced remissions greatly reduced the incidence of crises, surgical mortality, surgical accidents, and complications in general; however, it was not until the year 1938, with the introduction of radioactive iodine by Hertz and Evans and with the advent of the thiourea group of drugs in 1943, that the antithyroid drugs became the sole medical therapy.

Radioactive Iodine

The use of radioactive iodine (I^{131}) offered the first possibility of successful medical treatment of thyroid disorders. The thyroid gland constitutes 0.05 per cent of the body weight and contains about 20 per cent of the total iodine. The rest of the iodine is found in muscles, pituitary, ovaries, and blood. The thyroid gland concentrates iodine to about 260 times the level in blood plasma and

The first patient received an insufficient initial

thyroxine deficiency associated with a relative ex-

80 times that in any other organ. Therefore, because of its selective affinity for the thyroid, iodine was the ideal drug to be irradiated and became one of the most useful of all radioactive isotopes.

The radioactive iodine treatment is not widely used because it requires expensive apparatus, trained personnel, and the help of a physicist and a physician who have acquired training in the use of isotopes. The department has to be approved by the United States Atomic Energy Commission. Radioactive iodine therapy is controllable, predictable, and successful if it is preceded by careful I^{131} uptake studies, I^{131} excretion studies, or I^{131} conversion determinations. For the patient, it is the simplest and least expensive method. Hospitalization is not required, the patient being cared for as an outpatient. By its use, the dangers and complications of surgery are avoided. It may be repeated, if necessary; and, in the event of failure to control the disease, can be followed by surgery. It is the treatment of choice for patients over 60 years and probably over 45 years of age; for hyperthyroidism with cardiovascular or other serious complicating disease; for thyrotoxicosis recurring after surgery; for severe exophthalmus; for patients who refuse surgery; and for those who fail to respond to antithyroid drugs or nave serious manifestations of toxic reactions to these drugs.

Patients of child bearing age are not treated with I^{131} unless one of the above mentioned indications exists. It should never be used during pregnancy because of the effect on the fetus. Likewise, I^{131} should not be used for treating nursing mothers as it is excreted in the milk. Surgery remains the treatment of choice for toxic multinodular goiter because I^{131} uptake is not uniform enough to produce good results. Solitary nodules associated with hyperthyroidism require surgery because of the danger of carcinoma.

Some radiologists have withheld I^{131} treatment in patients under 45 years of age because of the hazard of late carcinogenesis. It is a known fact that carcinoma may be a late complication of irradiation in a variety of tissues. Also, the risk of late carcinogenesis is proportionate to the dose of irradiation given, whether it be internal or external irradiation. The total amount of irradiation delivered to the thyroid gland in the treatment of hyperthyroidism, however, is well below the limits which are known by experience to be safe for other organs. Consequently, most workers believe that, while this danger is theoretically present, it is a very remote possibility.

Radioactive iodine may be given in single or divided doses—clinics differ in their preference. Dr. Sommer, of our isotope department, prefers the single dose, oral method. He calculates the dosage on the basis of the estimated size of the goiter and the percentage of I^{131} uptake on the tracer study. The single dose method has the advantage of more prompt relief; but if an excessive amount is given, hypothyroidism results. Approximately eight weeks are required before the full effect of the irradiation is apparent. A short latent period commonly precedes the drop in metabolism. Occasionally, a mild exacerbation may occur during the first week. When the multiple-dose method of treatment is employed, eight weeks should intervene between each dose; otherwise, hypothyroidism may result. The oral dose used in most clinics varies from three to five millicuries for the first treatment, being increased to seven millicuries for resistant goiters. Dr. Sommer prefers to start on the lower range dosage rather than on the higher doses. Radioactive iodine should not be used after iodine or thiouracil therapy because the thyroid gland uptake of the isotope is definitely diminished and unreliable. By stopping the iodine therapy for two months, however, the I^{131} uptake returns to its previous level. With thiouracil therapy of two months' duration, adequate I^{131} uptake returns in one week after the drug is discontinued.

In our patients with hyperthyroidism treated with I^{131}, we have had excellent results. This is due to the fact that outpatients are carefully selected, and only those with definite indications are treated. We have had only one instance of mild exacerbation within the first week of treatment. This subsided readily, and the ultimate results were good. We have not had any cases of hypothyroidism or tetany resulting from hypoparathyroidism.

Five typical cases illustrating the different indications for I^{131} treatment are summarized in the following table:

RADIOIODINE TREATMENT

Five Representative Cases

Sex	Age	BMR	I^{131} UT	I^{131} mc.	Rx.	Results
M	51	+48	69%	2.54		Repeat dose 3 millicuries 10 wks. later. Excellent.
F	51	+75	58%	2.78		Postop. ca. ovary. Exacerbation. Good.
F	23	+39	73%	3.10		Rec. after surgery 2 yrs. Excellent. UT 3% 10 wks.
M	44	+33	68%	3.00		Refused surgery. Excellent. 9 lbs. in 8 wks. UT 4%.
M	49	+35	86%	2.32		Excellent. 20 lbs. in 8 wks. Normal activities.

Isotope Department, Scott and White Clinic

block than separately administered thiouracil and iodine. On the other hand, previous iodine therapy

Conclusions

The first patient received an insufficient initial dosage, but obtained excellent results after the second dose. The second patient was a poor surgical risk, already having had surgery for ovarian cancer. She had a mild exacerbation within the first week of treatment, but the ultimate results were good. Case 3 illustrates a recurrent goiter two years after surgery with excellent results from the I^{131} treatment. Case 4 concerns a patient with severe psychoneurosis who refused surgery. The last case (Case 5) shows excellent results with the smallest dose of I^{131}.

The most complete and comprehensive report of patients with hyperthyroidism treated with radioiodine is from Seed and Jaffe (1953). Their detailed study of 1,720 cases treated in 19 medical centers may be summarized as follows:

RADIOIODINE TREATMENT

1720 Cases

	Percentage
1. Satisfactory remission occurred	80%
2. Hypothyroidism - - - - - - - - -	9%
3. Unsatisfactory results - - - - -	5%
4. Incomplete reports or subsequent deaths - - - - - - - - - - - - -	6%

Seed and Jaffé (1953)

Surgery

The treatment of cancer of the thyroid is accomplished by surgery, x-ray therapy, radioactive iodine therapy, or by a combination of these methods. Surgery is the oldest, and still remains the best form of therapy. High voltage x-ray therapy continues to be used for palliation. We prefer radical neck surgery, and only in patients with metastasis do we use the radioiodine therapy—provided, of course, that we can demonstrate the areas of metastasis with adequate radioactive uptake. Often, we use a combination of these two therapies.

The thiouracil compounds serve as a powerful reducing agent by neutralizing the oxidizing enzymes of the thyroid. Thiouracil also reduces and reactivates the inactivated thyrotropin. The double action facilitates hyperplasia of the gland associated with its diminished function. This block to the synthesis of thyroid hormone produces a state of thyroxine deficiency associated with a relative excess of the thyrotropic hormone. The epithelial hyperplasia becomes intense in a friable, vascular, and adherent thyroid gland. Therefore, the combined preoperative use of thiouracil and iodine as iodothiouracil inhibits thyrotropic hormone and leaves sufficient thyroxine in the body. Amelioration of the toxic phenomena thus insures an easier, safer, and less hemorrhagic thyroidectomy, and this is the primary indication for these drugs. In my opinion, these drugs should never be used with the expectation of obtaining a permanent cure.

At the extremes of life, the child and the aged are not suitable candidates for surgery, and treatment with one of the thiouracil drugs is indicated. The toxic flare ups of puberty, pregnancy, and menopause require palliation with drug therapy. The severe psychoneurotic and the mentally unstable patients may be treated with these drugs. Thiouracil compounds are used primarily for preparing the patient for surgery.

Antithyroid Drugs

Hyperthyroidism generally can be controlled by the administration of the thiouracil compounds, and a euthyroid or a hypothyroid state can be maintained for as long as treatment is continued. There remains, however, a considerable divergence of opinion on the incidence of prolonged remission after cessation of the therapy. I agree with Bartels, who stated, "this form of therapy leaves the patient with a thyroid gland that is still hyperplastic and if the patients in remission are observed sufficiently long, all can be expected to have a relapse."

When Astwood first introduced the drugs, only two were available, thiourea and thiouracil. Both of these drugs were most unsatisfactory because of their bad taste and toxicity. Fever, rash, purpura, the Mikulicz syndrome, leukopenia, and the dangerous agranulocytosis all occurred too frequently to risk giving these drugs. With continued research and investigation, the newer drugs introduced were more effective and less toxic. The additional drugs used, with varying degrees of success, are thiobarbital, propylthiouracil, mercaptoimidazole (Methimazole, Mercarzole), neomercazole (C.G. 1), iodothiouracil, 5-iodo-2-thiouracil sodium salt, and n-butyl 3:5 diiodo-4-hydroxyl benzoate (D. B. H. B.). Methylthiouracil is popular in England, and propylthiouracil in the United States. Mercaptoimidazole (Mercazole, Methimazole) and its newer derivative, neomercazole (C. G. 1) are very effective and widely used. Various iodinated thiouracil compounds are just as effective and their chemical combination suggests that they have less goitrogenic action for an equal antithyroid

block than separately administered thiouracil and iodine. On the other hand, previous iodine therapy retards response to the antithyroid drugs.

With these newer thiouracil drugs, the toxicity is very low. A few patients develop a sensitivity and have a rash, febrile reaction, leukopenia, or purpura; but all of these complications disappear when the therapy is discontinued. Agranulocytosis has been almost unseen. There is virtually no danger if the patient is warned to report any rash, fever, or sore throat.

The most recent addition to the antithyroid drugs is potassium perchlorate. I have not used this drug as it is still being tried experimentally. From the available literature, one may make the following deductions: Potassium perchlorate appears to be an effective antithyroid agent in preoperative or prolonged treatment of thyrotoxicosis. It is of particular value in those patients who are sensitive to or fail to respond to the drugs of the thiourea group or to iodine. So far, the only toxic symptoms have arisen from irritation of the gastrointestinal tract. Further experience and study are required for full evaluation of this new antithyroid drug.

In my opinion, cancerous transformation in the thyroid gland is a possible complication of the thio-compound therapy. All of these compounds induce cellular hyperplasia of the thyroid gland, and one must view with suspicion the possible inter-relationship of hyperplastic influence of glandular tissue and cancer. Our pathologists, in the last few months, have examined three surgical specimens exhibiting definite cancer in the thyroid gland. In each one of these cases, the patient had preoperative treatment with one of the thiouracil drugs. Likewise, further proof of the carcinogenic effects of these drugs has been demonstrated experimentally. Large doses of thiouracil, or a related compound, have been fed to rats and mice over a period of many months. The changes, tumors and carcinomas, that appeared in the thyroid glands of these experimental laboratory animals were comparable to those found in the human thyroid gland.

No discussion of thyroid disorders is complete without mention of thyroiditis. The etiology remains undetermined in the vast majority of cases. Despite the claims for thiouracil compounds, thyroid medication, iodine, or antibiotics, a satisfactory medical treatment has not been found. Radioactive iodine offers no help, and may increase the hypothyroidism. Although external irradiation is advocated by some, it should never be used until the diagnosis definitely has been established. In my experience, I have not found a satisfactory treatment and, therefore, resort to observation, symptomatic, and supportive measures.

Conclusions

There are three methods of treatment for disorders of the thyroid: radioactive iodine, prolonged drug therapy, and surgical extirpation. Each has its merits.

1. *Radioactive iodine* is simple to use, is controllable, and is successful therapy.
2. *Antithyroid drugs* are simple to administer and toxicity is minimal; but the recurrence rate after usage is too high for prolonged drug therapy to be considered truly satisfactory. At the present time, the antithyroid drugs are employed widely in the preparation of the thyrotoxic patient for surgery, and to a lesser extent in the chronic control of the overactive thyroid gland.
3. *Surgery* brings prompt relief, and its cure rate is the highest obtainable. Postoperative complications may arise. Also, a few patients may have general objections to any form of surgery.

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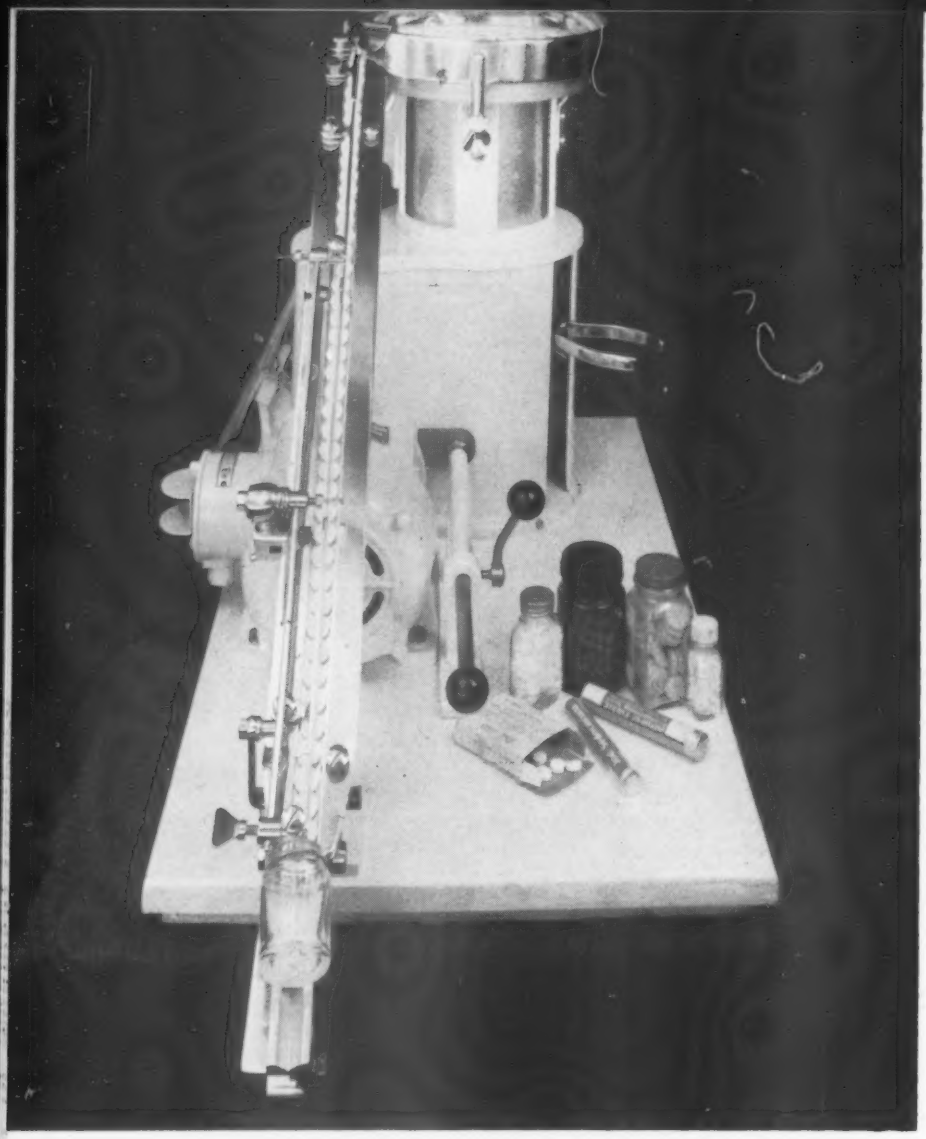

Rotax Model-S
Tablet Counter

by ROSEMARIE PISANELLI

WITH THE EVER INCREASING NUMBER of new products introduced on the market today, it is only fitting that hospital pharmacists endeavor to lessen this burden by a new concept of an old idea. The very frequency with which the tablet and capsule group is dispensed lends it to a prepackaging operation. True, it does not directly help to alleviate stocking duplications—The Formulary Committee does that. However, prepackaging does aid in dispensing tablets in the shortest possible time—a precious commodity hard come by today.

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Certain prerequisites are to be considered before a pharmacy department can attempt to prepackage safely, economically, and with a minimum expenditure of time.

A. Nomenclature

Introduce and inculcate in the hospital staff the use of generic nomenclature wherever possible. This can be done in part by a Formulary System.

B. Formulary System

Most of us are familiar with this phase of instruction in an institution. The use of generic nomenclature where feasible in a Formulary, instead of brand names, makes for a better educated and trained professional staff. It becomes invaluable in purchasing procedures.

A NEW CONCEPT IN *prepackaging tablets* IN THE HOSPITAL

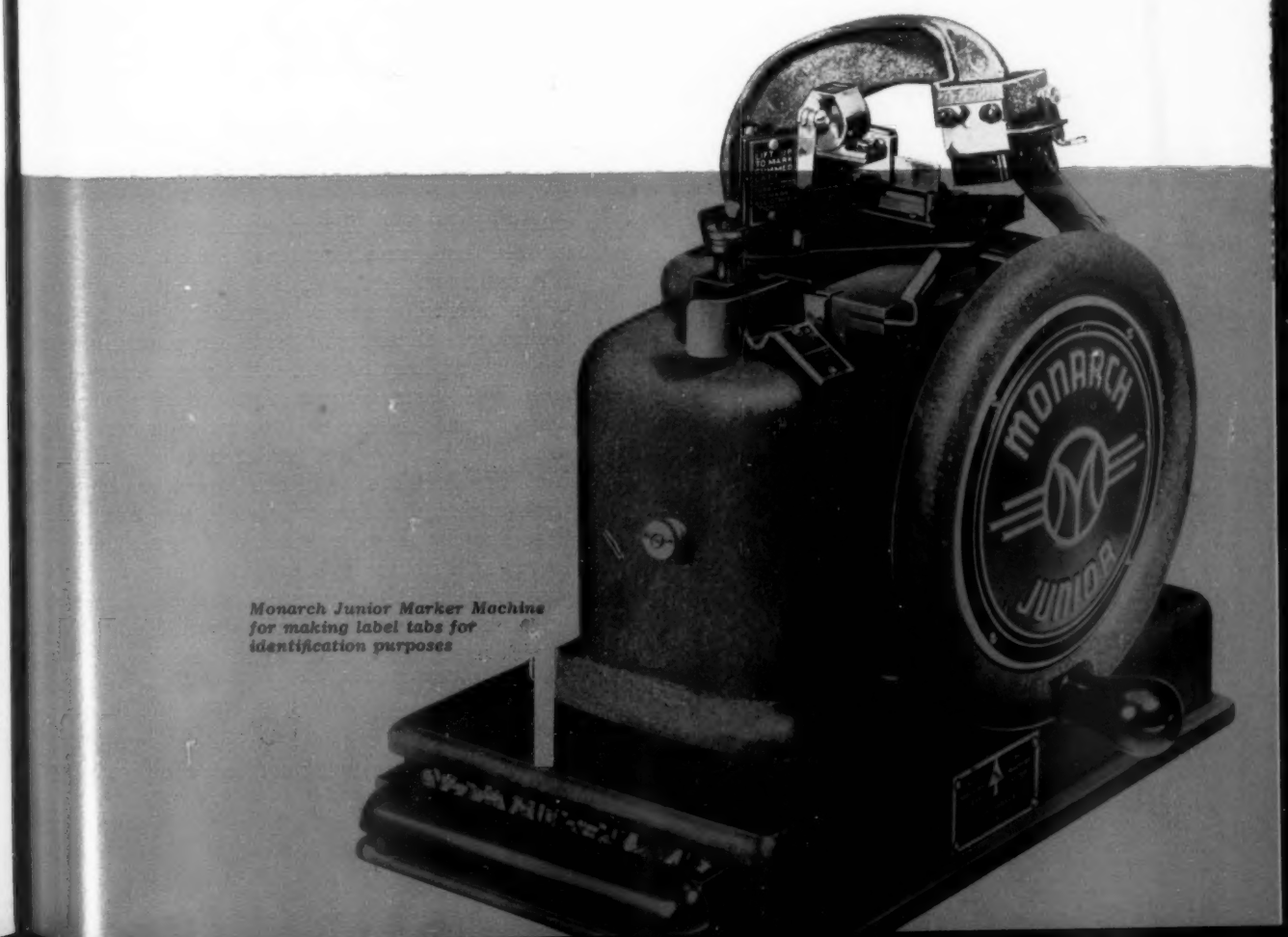
C. Purchasing
Bulk quantities of quality medications can be bought by utilizing generic nomenclature through a quotation or contract system.

D. Inventory
A prepackaging operation enables the pharmacist to have the minimum amount of investment with the maximum amount of assets. It keeps a near perfect tally of shelf stock where there is sufficient storage space.

E. Storage Area
Adequate storage space is a necessity. Space must be allocated to all drugs according to their particular demand. Prepackaged units are stored in the same cartons from which the bottles have been used. These boxes can more easily be stacked in a storage area than can bulk cartons containing broken or unbroken quantities of tablets. Bearing this in mind, storage area and inventory problems are minimized.

Methods of Prepackaging

By far, the best method of prepackaging medication of the tablet group is by an automatic

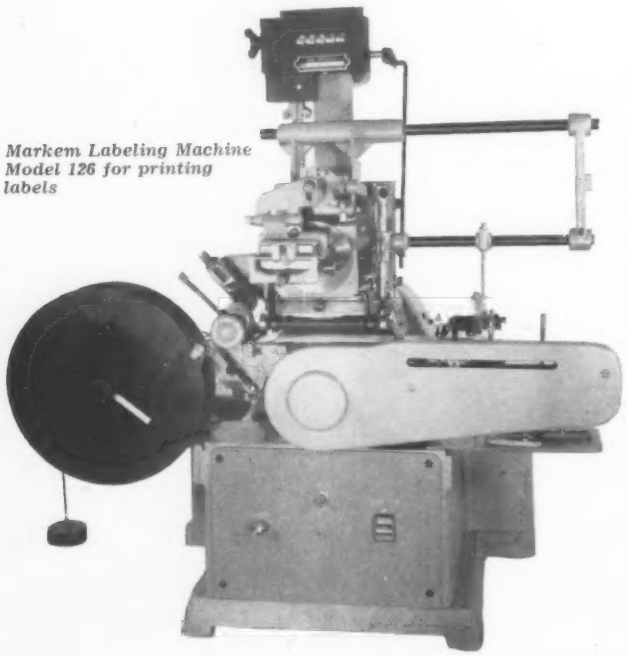


Monarch Junior Marker Machine for making label tabs for identification purposes

Table 1. Comparative Efficiency of Prepackaging Operations Using the Rotax Machine with Other Methods.

Item	Method	Quantity	Units	No./Unit	Time	Comparative Efficiency	
						Method Used Cost per Unit	Rotax Saving per Unit
Seconal Sodium	Electronic Scale	7,200	288	25	2 hr.	.03	.02
Donnatal	Measuring Cup	3,000	120	25	1-¼ hr.	.037	.015
Butisol Sodium	Measuring Cup	2,000	40	50	½ hr.	.04	.02
Digoxin	Electronic Scale	200	80	25	40 min.	.035	.026
Papaverine Hydrochloride	Electronic Scale	3,000	120	25	1 hr.	.035	.019
Banthine	Measuring Cup	4,000	160	25	1-¾ hr.	.03	.01
Thephorin	Hand Count	1,000	40	25	40 min.	.07	.05
Hexavitamin	Measuring Cup	15,000	100	150	1-½ hr.	.04	.025
Gantrisin Tabs.	Measuring Cup	5,000	200	25	1-¾ hr.	.036	—
Pentobarbital Sodium	Electronic Scale	7,200	288	25	3 hr.	.04	.025

All times include uncapping and capping bottles, counting, filling, and labeling.



Markem Labeling Machine Model 126 for printing labels

counting device. Time and motion studies have proven that hand counting is slow and costly. Though measuring cups are faster, their inaccuracies, particularly with expensive tablets, negates their speed. Shadograph scales are good; however, the awkwardness in using them causes wasted motion. The electronic scale goes one step further as an approach to an ideal prepackaging device, but its over-sensitivity and static electricity result in wasted expenditure of time. Owing to the many various sizes of shaker trays with perforated slides that must be kept to utilize this device, it is impracticable for use in a hospital pharmacy and by its nature is ideal only in a commercial house.

As can be seen by Table I and Table II, we have found, what we feel to be the ideal approach to a hospital pharmacy prepackaging operation. The machine responsible for this increased efficiency is a Rotax Model-S Tablet Counter. The Rotax is simple, functional, safe and within our

crepancy as to contents of the container these

clinic day, the patient is grateful to have this

economic means. The principle of the counter is centrifugal force. It has solved 90 percent of our counting problems excluding elliptical, triangular, and square-shaped tablets. The Rotax S can handle capsules, plain or coated tablets, pills and wafers of all sizes. It can count and fill into any tube, vial, bottle, box or bag of any size. It occupies 14 x 24 inches of table space. The machine is driven by 1/10 HP and operates on 110 volts. The Rotax S can be operated by nonprofessional personnel under the supervision of a pharmacist. This machine owes its adaptability to simple interchangeable tubing and leverage settings. Its simplicity further allows for rapid dismantling, easy cleaning and shifting of set screws, to change over to another counting operation. The times required for change over are as follows:

Tablet to Enteric Coated.....7 minutes
Enteric Coated to Capsules.....6 minutes
Tablet to Tablet.....4 minutes
Enteric Tablet to Tablet.....3 minutes

Determining Unit Size

We are now concerned with the problem of determining the dispensing unit size. One solution is as follows: From the Comptroller's office we get the average hospital visit per patient (5-6 days currently). We then determine the average dose per day of medication considered for prepackaging. These figures are multiplied and the resultant figure is our "prepackage number." A one-year survey of medications used orally, indicated that 25 doses was our mean average. We, therefore, have since stabilized on that number. Rare exceptions to the rule are such products as barbiturates (units of 10), tetracycline group (units of 16) and floor stock drugs (units of 50-100).

Control System

In any prepackaging operation, a control system is paramount. A sheet which bears the following information has been helpful in our case:

1. Number of tablets
2. Original serial number
3. Number of units prepackaged
4. Size of container used
5. Time spent
6. Cost of container
7. Cost of ingredients
8. Cost of labor per unit
9. Overhead
10. Total cost of prepackage item
11. Name of Item
12. Strength
13. Manufacturer
14. Prepackaged by
15. Our control number
16. Date
17. Comments - or other pertinent data

This sheet is filled for every prepackaged item. The system serves as a control, safety check, and guide to selling price. Every label bears our control number, in the event any question arises pertaining to the contents of the bottle it is easily checked against the prepackage sheet bearing the same control. This is in effect a self-explanatory safety factor that one could hardly be without. To serve as a ready reference in the event of any dis-

TABLE 2. TIME REQUIRED FOR PREPACKAGING ITEMS USING THE ROTAX MACHINE

ITEM	QUANTITY	UNITS	No./U.	TIME
Seconal Sodium	7,200	288	25	52 min.
Butisol Sodium	3,000	120	25	30 min.
Digoxin	14,000	559	25	75 min.
Papaverine	1,000	40	25	15 min.
Hexavitamin	23,000*	231	100	65 min.
Pentobarbital	4,100	144	25	30 min.
Vitamin B Complex	51,600*	576	100	1 hr. 14 min.
Pabalate	9,000*	90	100	17 min.
Gantrisin Tablets	24,850*	984	25	70 min.

* Machine only. (counting and filling)
All times include uncapping and capping bottles, counting, filling, and labeling, except those marked with an asterisk.

crepancy as to contents of the container these sheets are filed monthly and kept for two years.

Labeling

This phase of a prepackaging operation has always presented problems. The purpose of ordering large quantities of gummed labels to obtain the best possible price has been defeated by the drawback of filing and storage.

Hot weather causes adherence with the end result of spoilage causing reordering and again the cycle involving the printer's deadline, proper color, size, proofreading, back again to the purchasing agent, and finally to the printer's. Our department has satisfactorily overcome these obstacles, simply by printing our own labels with a Markem Labeling Machine, Model 126A.

This is a heavy duty machine that produces complete small paper labels from rolls of blank material. Label stock is fed from a roll, printed and (1) rewound, (2) perforated and rewound, or (3) cut off and neatly stacked. An extra feature of this machine is the predetermining automatic counter and shut-off device. The machine produces 60 to 100 labels per minute. It turns out labels which are of consistent color, proper size, bear generic nomenclature, a control number, strength, and whatever else may be pertinent to labeling requirements in a matter of a few minutes. The machine is simply operated which makes it an easy task to instruct nonprofessional personnel in its usage. Space required for the entire labeling operation is cut to a minimum of two square feet as compared to filing cabinets with thousands of labels.

As a public relations device, this machine can also render a service to other departments such as Anesthesia, Dietetics, Chemistry, Bacteriology, and Hematology Laboratories by printing their required labels. This is an added point in justifying the purchase of the machine and its amortization in a shorter period of time.

The Outpatient Department necessitates a different labeling procedure which is solved by a Monarch Marker. This machine turns out a self-sticking Senso Roll stock label giving name, strength, quantity, price, and control number. This type of label has proven its worth by enabling the outpatient pharmacist to expedite dispensing prescriptions with speed and safety, thereby rendering a service to the patient and hospital.

The Monarch Label acts as a safety label when a direction label is placed over it. Should a question ever arise regarding contents, proof positive is available in the form of the Monarch Label bearing all pertinent data as to the contents of the container. If one considers that the Pharmacy Department is the last stop to a, perhaps, trying clinic day, the patient is grateful to have this prescription filled promptly, accurately, and in accord with the economics involved. I feel this can be insured by a total prepackaging system, and in this manner public relations of a different nature can be served.

Summary

Summarizing evaluation of aforementioned methods of prepackaging tablets, certain advantages are listed as follows:

1. Safety Factor: When dispensing from a 1,000 tablet package and considering 25 as a unit, there are 40 potential chances of error. However, if the entire container is prepackaged and labeled at the same time, there remains one chance to err.
2. The Rotax S insures an absolute, accurate, and efficient method of counting under hygienic control.
3. Absolute accuracy in counting bypasses potential arguments resulting from shortages on the floors.
4. Prepackaging reduces nurses' waiting time in calling for inpatient prescriptions and effects a reduction in the time used in dispensing an outpatient prescription.
5. Time saved by the pharmacist can be utilized to better professional service by answering technical questions and presenting data regarding medications dispensed. In this manner, a Pharmacy with a consultant status can be established.
6. As witnessed by the foregoing charts, the cost of handling drugs is markedly reduced.
7. Prepackaging affords an inventory with less dead stock.
8. Inventory of glassware is then concerned solely with active stock, thereby condensing two storage areas into one—making available precious floor space.
9. More economical purchasing habits can be introduced by bulk purchasing.
10. When a prepackaging operation of tablets from bulk containers is completed, vendors' miscounts can easily be spotted. In a recent prepackaging operation of Raudixin,® an overage of 2,500 was calculated. By the same token, when Peritrate® was packaged, a shortage of 800 tablets was discovered, with the consequent reimbursement of same.

Since the advantages afforded by a prepackaging operation are of special value to hospital pharmacies and since the prepackaging operation is dependent upon mechanical devices for a smooth running procedure, it is therefore conceivable that the amortization of equipment can be realized in a period of 12 to 18 months, according to the volume handled.

a new IODOPHOR DISINFECTANT

survey and evaluation

by ROBERT C. BOGASH

THE SELECTION OF A GENERAL PURPOSE DISINFECTANT that will do all the things attributed to it has long been a problem to hospital personnel. The problem has been particularly annoying to hospital pharmacists who, because of their insight of bacteriology and sterilization, can discern certain frailties or the lack of information regarding the purported results of various commercial disinfectants. In the past this has not been considered so critical a problem as to involve large scale research on a hospital pharmacy level. However, the lack of adequate and positive sterilization can be an incapacitating experience. This can be attested to by past epidemics of infantile diarrhea, gastroenteritis among house staff, and the occasional failure of terminal sterilization technics. It therefore behooves a hospital to be absolutely certain that the disinfectant it employs will kill as many organisms as possible. In effect, the disinfectant must be nonselective in action.

There are probably as many disinfectant formulations as there are hospitals, and each formula is alleged to kill practically every form of microorganism. Experience has taught us that they do not. Sales promotion claims, in many instances, are not substantiated by either empirical or laboratory data.

We are all familiar with disinfectants of the phenolic coal tar, chlorine, chlorinated phenol, and quaternary ammonium chloride-type formulations. More recently there has been introduced a group of formulas containing iodine as the active ingredient. This type of formula has been classified chemically as an iodophor. Iodophor is descriptive of a formula that utilizes a surfactant, or surfactants, as carriers and solubilizing agents for iodine. The usual characteristics of an iodophor are enhanced bactericidal activity of iodine, accompanied by a reduction of vapor pressure, odor, and staining. The latter two are reduced almost to the vanishing point. Lastly, iodophors can be readily diluted with water.

It has been our experience to use a new iodophor (Wescodyne*) for the past nine months. This preparation was presented to us as a nonirritating, nonstaining germicide, and nontoxic when used according to directions. It was our objective to use this preparation as a general disinfectant, sanitizer, and cleanser. It is on this objective that we report.

Review of Iodine

As a result of thousands of papers having been presented in the past eighty years, the disinfectant properties of iodine are not questioned. Iodine has been shown to act against a variety of microorganisms such as viruses, spores, protozoa, fungi, and bacteria, including the tubercle bacillus. Because it will kill all organisms it is termed nonselective. This is in direct contrast to many germicides in use today.

Composition of Wescodyne

Active ingredients:

Polyethoxypolypropoxy ethanol-iodine complex	7.75 %
Nonylphenylether of propylene glycol-iodine complex	3.75 %
Inert ingredients	88.50 %

Iodine as used in this type of complex is solubilized in the nonionic surfactants and then stabilized. The resulting complex may be diluted with water and will retain its stability after dilution. In the concentration supplied, Wescodyne contains a minimum of 1.6 percent available iodine.

Dilutions Recommended for Use

One ounce (30 ml.) of the concentrate diluted with five gallons of water yields a resultant solution containing 25 ppm. of available iodine. Likewise, when two or three ounces (60 or 90 ml.) of the concentrate are diluted to five gallons, the resultant solution will contain 50 or 75 ppm. of available iodine.

When diluted as recommended Wescodyne has a rich amber color. When the solution is employed, the color fades as it kills organisms. In effect, the color provides the user with an indicator as to the solution's germicidal activity.

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*Kindly supplied by Dr. Perry Bartlett, Chemical Director, West Disinfectant Company.

Dilutions employed:

Chest Ward	50 ppm.
Operating Room	75 ppm.
Dishes, Glassware	25 ppm.
Halls, Floors, Walls	25 ppm.
Diet Kitchen	50 ppm.
Cafeteria	50 ppm.
Terminal Sterilization	50 ppm.
Thermometers (rectal and oral)	50 ppm.

Background Information

The following summary of studies on toxicity, irritability, and bactericidal and viricidal action of Wescodyne are presented.

Pharmacology

1. Acute oral toxicity of concentrated form:
White rats — LD_{50} — 12 ml./Kg.
Guinea pigs — LD_{50} — 15 ml./Kg.

2. Dilute form (one ounce (30 ml.) to one gallon): Over 100 ml./Kg. was administered to both rats and guinea pigs without producing any fatalities. It was deemed inadvisable to administer higher dosage for fear of mechanical injury.

NOTE: Based on an LD_{50} of 15 ml./Kg. for guinea pigs, a 70 Kg. man would then require 62 gallons of a recommended dilution to yield an equivalent LD_{50}.

Skin Irritation and Sensitization Studies

1. Schwartz Method:
Concentrated Wescodyne in the form of patches was applied to the backs of 200 unselected subjects for five days and then removed. The reactions were noted. Three weeks after their removal, the material was applied again for 48 hours and then removed. The reactions were again read.

Results: 1st Application — none of the males and none of the females reacted.
2nd Application — none of the males and none of the females reacted.

2. Repeated Insult Test of Cantor and Shelanski:
The material was applied in the form of patch tests to the backs of 50 unselected subjects for 24 hours every other day for 15 applications for a total of 30 days, after which the reactions were noted.

Results: Concentrated Form: Several one plus reactions were noted on 23 persons. No reactions on reapplication.
Dilute Form: (one ounce (30 ml.) to one gallon) No reactions on any application.

Conclusions: From the standpoint of skin irritation and sensitivity this substance in either the concentrated or dilute form is neither a primary irritant nor sensitizer.

Bactericidal Tests

1. Wescodyne, containing 25 ppm. available iodine, when tested against *E. coli* by the procedure of Black and Weber, killed all of the test inoculum in 15 seconds. The same test required 50 ppm. of sodium hypochlorite to kill the inoculum in 15 seconds and 200 ppm. of alkyldimethyl benzyl ammonium chloride failed to kill the same organism in 120 seconds.

2. In a comprehensive test utilizing the procedure of "a capacity test for germicidal activity" of Cantor and Shelanski against the following organisms:

Salmonella typhosa
Micrococcus pyogenes var. *aureus*
Salmonella pullorum
Pseudomonas aeruginosa
Trichophyton interdigitale
Penicillium luteum
Saccaromyces cerevisiae

Wescodyne at 50 ppm. was tested against sodium hypochlorite (100 ppm.) and alkyldimethyl benzyl ammonium chloride (at 200 ppm.). The results at the above dilutions show Wescodyne to be three times as effective as sodium hypochlorite and four times as effective as the quaternary ammonium chloride.

3. Against *Mycobacterium tuberculosis,* in dried sputum films, Wescodyne at 50 ppm. killed the tubercle bacillus in 60 seconds. When the dilution was increased to 25 ppm. of available iodine the tubercle bacillus was killed in 120 seconds.

Viricidal Tests

1. Recent results of intensive laboratory studies at an Eastern medical school show Wescodyne at 50 ppm. available iodine to kill the virus of poliomyelitis.

2. Further laboratory results using a solution of Wescodyne at 25 ppm. of available iodine will kill the virus of influenza and the virus of Newcastle disease.

Inasmuch as this preparation exhibits nonselective viricidal activity it appears to be safe to say that it would be equally as effective against the virus of infectious hepatitis. This one disease has long been a problem in terminal sterilization procedures as commonly used in many hospitals.

Summary

The following may be summarized regarding this iodophor solution:

1. The nonselective nature of this iodine complex is desirable for total disinfection. It affords a preparation that will kill such microorganisms as the viruses of poliomyelitis, influenza, and Newcastle disease. At the same time it is effective against bacteria, fungi, spore formers, and yeasts.

2. The unusual safety factor that is incorporated in this solution offers a visual indicator to the effect of the solution's viricidal-bactericidal activity.

3. When used in the recommended dilutions of 25 to 75 ppm. of available iodine, there was freedom from corrosive action.

4. The solution did not stain any article with the exception of starched materials.

5. There was a negligible number of complaints attributed to skin sensitivity or irritation.

6. The solution afforded good detergency when used as a cleanser and left no residue on glassware.

7. Time and motion studies indicated a definite reduction in the time necessary to prepare dilutions for use. When compared with the former disinfectant used, a 65 percent time economy was noticed.

a new approach to the

FORMULARY PROBLEM

— its standardization

by ARTHUR J. GIBSON *and* JOAN RICE

IN COMPILING A FORMULARY for an individual hospital unit the pharmacist is confronted with many problems. One of the most perplexing of these is finding a suitable yardstick or an acceptable standard to be used in its preparation. These problems assume large proportions when consideration is given to the wide range of medications carried in today's hospital. Hence the pharmacist must not only decide what U.S.P., N.F., N.N.R. drugs and other proprietaries are to be included in the formulary, but also what hospital preparations of his own manufacture are to be admitted. Other questions arise which further complicate the picture. As an example these can range from such questions as the inclusion or omission of a table of contents or a therapeutic index to a brief or detailed discussion of the administration of the medications listed in the formulary. He must also consider the presentation of the formulary and its possible rejection by the medical staff. Certainly the pharmacist may wonder at times whether or not the results justify the effort expended, for essentially the preparation of a formulary is a long and difficult task.*

Much of the opposition which may be encountered in the incorporation of the formulary within the framework of the hospital may be due in part to the "confusion, misunderstanding, and lack of information" regarding the objectives of such a program.[1,2,3] On the other hand, few of the medical staff will deny its advantage to the hospital once the purpose in establishing the formulary is outlined.

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*EDITOR'S NOTE: See also "Proposal for a National Hospital Formulary Service," *Bull. Am. Soc. Pharm.* 11:328 (Sept.-Oct.) 1954.

Benefits of Formulary

The hospital formulary has been evaluated by hospital pharmacists as well as by physicians, hospital administrators, and nurses.[4,5,6,7,8,9] It has been pointed out that the formulary is an invaluable source of information regarding composition, dosage, and routes of administration. It serves as a therapeutic guide for the intern, resident, and other technical staff members. Substantial savings can be effected through the use of the formulary since it avoids needless duplication of identical medication marketed under different trade names. Elimination of such duplication results in reduced inventory and more rapid turnover of drug stock. The formulary assists the busy physician by keeping him informed of the medications carried by the pharmacy and consequently saves his time and that of the pharmacy staff. The slogan "We are as near as your telephone" might well be changed to "We are as near as your formulary, Doctor."

Other factors point to the benefits derived from utilizing a formulary. For example, it fosters better relationship between the nursing staff and the pharmacy. The dissemination of information through the formulary can be of material assistance to the nurse upon whose shoulders falls the heavy responsibility of administration of medication to the patient. In an administrative nursing capacity, Cole has stressed the importance of the pharmacist assuming more responsibility in this matter.[9] The problem of maintaining reasonable cost of medication needed by the hospital patient is continually enlarging. The physician today has a far greater range of therapeutic agents to use in present day treatment of disease than was existent even a decade ago. This fact coupled with the rapid increase in the number of hospitals through-

out the country and the corresponding growth in patient admissions lends additional emphasis to this problem of drug cost control. This situation assumes significant proportions when it is realized that hospital business today is big business. It ranks as the sixth largest industry in the country, and of the total yearly hospital expenditures 5 percent is for pharmaceutical services. Others have pointed out that the hospital formulary is one of the prime elements which can be used in the control of patient medication costs as well as one of the most efficient management tools in modern hospital pharmacy practice.[5,10,11]

Thus the formulary can be regarded as a compendium of general information on the medications the pharmacy carries on its shelves. It can be a valuable therapeutic tool furnishing information on indications, dosage, routes of administration, and forms available. It saves the physician and pharmacist time; it reduces inventory and lowers medication cost by the avoidance of duplication and the overlapping of drugs used for the same purpose.

Lack of Standardization

Unfortunately of the several possible deterrents to the acceptance of the hospital formulary by the medical staff, at least one can be laid at the door of the pharmacist himself—the lack of standardization. An examination of formularies now available shows extreme divergence of opinions and objectives on the part of those who had compiled them. As a result, as many different types of formularies are existent as individuals who have authored them. These range in scope from simple alphabetical tabulations of drugs to the more elaborate versions of textbook size. The latter embraces the entire field in which the history, chemistry, administration, dosage, contraindications and availability are delineated. Clearly, the value of the formulary and its acceptance by the medical staff in any hospital, large or small, must be based on the element of service it renders, for obviously without service it can be of little value. It is doubtful whether or not this measurement or gauge of service can be given as completely and effectively by those hospital formularies which indicate individual efforts as compared to the standard of service that would be possible through a formulary combining the team efforts of many hospital pharmacists. The latter procedure would carry weight, prestige, and authority difficult to imagine through present methods. It is a reasonable hypothesis to conclude recognition and approval of the hospital formulary would follow, where the pooled, collective efforts and opinions of a cross section—if not all—of the hospital pharmacists in the country were used.

To begin with, the formulary should represent something other than the mechanics of listing the U.S.P., N.F., and N.N.R. drugs used in the hospital, although no one will deny that the *U.S.P.* and *N.F.* have a definite place in hospital pharmacy. These texts have established certain necessary standards which find a useful place particularly in the manufacturing and compounding laboratory. On the other hand, one concise text is needed for quick reference. For example, the writer after twenty-five years in hospital pharmacy must sadly admit that in attempting to answer the many daily inquiries of staff physicians, he must consult a long and diversified list of references ranging from Goodman and Gilman and the Red Book to brochures from manufacturers as well as various hospital formularies.

The Ideal Formulary

The ideal formulary can be pictured then as a brief, informative book of limited physical dimensions which would contain the desired information pertaining to drugs routinely used in all hospitals and commonly stocked by the pharmacy. In other words, it should be standardized. Standardization has many advantages. For instance, there would be a substantially lower cost of publication of such a formulary as contrasted to the cost of formularies published under the auspices of separate institutions.

A standardized hospital formulary would also avoid many of the idiosyncrasies and errors of individual judgment which may unknowingly plague the author, for the line of least resistance is obviously to incorporate his own interpretation of the material to be used in the formulary which he considers essential. Again it is far more difficult for one, singly, to consider the formulary structure in the same objective manner as it would be for a group of hospital pharmacists working on the same project. Collectively then, better planning of the contents of the formulary is possible.

As stated previously the preparation of any acceptable hospital formulary is both time consuming and costly, and it is logical to believe this element of time and cost can be more readily absorbed by the larger hospital units. But what of the smaller unit with a limited pharmacy staff and an even more limited budget? Surely, the need for a formulary is as great for the smaller hospital as for the larger hospitals by a wide margin. According to a 1954 report of *The Journal of the American Medical Association,* the largst percentage of hospitals in the United States is under 500 beds. These same hospitals account for 92 percent of the total number as well as 85.1 percent of patient admissions. Such facts assume increased importance when con-

sideration is given to the number of hospitals and the number of pharmacists employed in these institutions. The same isue of *The Journal of the A.M.A.* reports that of 6,840 registered hospitals, 60 percent employ full-time pharmacists and over 9 percent employ part-time pharmacists.[12] Therefore, it can be concluded that better economy of the pharmacist's time and cost of publication would result through collateral preparation of a standard formulary.

The AMERICAN SOCIETY of HOSPITAL PHARMACISTS has adopted the *Minimum Standard for Pharmacies in Hospitals* and Suggested Plans for 50, 100, and 200 Bed Hospitals as introduced by the United States Public Health Service. These have been approved by the SOCIETY and by the American Pharmaceutical Association.[13,14] Why not consider the adoption of a standardized hospital formulary with similar objectives in mind? The need for standardization becomes more apparent when it is observed that of 4,370 hospitals replying to an American Hospital Association questionnaire, 2,537 *have their own formularies.*[15]

Suggested Plan

An outline of a suggested plan for standardization calls for the following considerations:

1. The appointment by the President of the ASHP of a committee to make a study of the proposed development of a standard formulary which could be used to advantage by *all hospitals* and which could be offered to them on a nominal fee basis.

2. Consideration by the committee of preparing a suitable questionnaire to be sent to a cross section of hospital pharmacists with a brief statement outlining its purpose. Sample questions to be answered on a yes-or-no basis might cover such pertinent information as:

   a. Please place a check mark indicating whether or not your hospital uses the following medication.
   b. Should the formulary include a brief description of narcotic regulations; the Durham-Humphrey bill?
   c. Do you believe a page devoted to prescription writing to be of value?
   d. Do you think a line or two on the therapeutic indications, routes of administration, and related information should be included?

3. The committee might consider a formulary of the loose-leaf type. This would result in a flexible formulary readily adjusted to the individual hospital requirements. For example, the pharmacist could write in any new items he was asked to stock as well as rule out those items not used in the hospital or those deleted for other reasons. This would enable him to keep his formulary on an up-to-date basis with little expenditure of time and at nominal cost.

4. It is suggested the committee consult with the A.Ph.A. regarding financial assistance in the printing and distribution of a proposed questionnaire and later in publishing of the formulary. Thus economy is effected by large scale printing of the formulary which would permit its purchase by hospitals at a nominal fee.

Summary

Not only hospital pharmacists but also physicians, hospital administrators, and nurses have commented on the value of the formulary to the hospital. The associated problems resulting from developing individual hospital formularies acceptable to specific hospital requirements have been discussed. The advantages of a standardized hospital formulary practicable in all hospitals have been shown. A suggested plan to develop such a formulary has been outlined.

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sumed that there can be no objection to 8 per- make a volume of 500 ml. A solution of the ingredients

A STUDY OF A PARENTERAL SOLUTION OF MORPHINE AND PENTOBARBITAL

by Louis P. Jeffrey and John T. Murphy

Since morphine and barbiturates are synergistic[1], it was suggested by the Department of Anesthesiology of the Massachusetts General Hospital that a parenteral preparation containing both these drugs would be very useful because it would obviate the need of two injections. More specifically, the Department suggested that a preparation of a combination of morphine and pentobarbital in a parenteral medication be attempted. Such a combination presented a problem since barbiturates are relatively insoluble in water; and although the salts of barbiturates are water-soluble, they manifest such high *p*H that they are incompatible with morphine salts.

This investigation was undertaken, therefore, to study the method of preparation, the assay procedure, and the method of sterilization of a parenteral solution of morphine and pentobarbital.

Because morphine phosphate presented many more advantages than any other salt of morphine, including even morphine sulfate, it was used in this study. Morphine phosphate contains less water of crystallization than the sulfate, and this water is more firmly bound. When stored, morphine sulfate loses water and its solution discolors and becomes cloudy. The phosphate is relatively stable. Morphine phosphate is less bulky and more free-flowing than morphine sulfate. Morphine phosphate is soluble in five times it own weight of water, whereas morphine sulfate requires more than fifteen times its weight of water for solution. The phosphate dissolves in water at a considerably faster rate than does the sulfate. Morphine phosphate contains 72.5 percent of anhydrous morphine alkaloid.

Morphine and pentobarbital have been determined both qualitatively and quantitatively by many methods. Since the development of accurate optical instruments, such as the Beckman DU Spectrophotometer, the ultraviolet spectra of the alkaloids and barbiturates have made an excellent basis for the determination of small amounts of these substances.

In 1940 Elvidge[2] reported an ultraviolet spectrophotometric method of differentiating several barbiturates, including pentobarbital, in pharmaceutical preparations.

Abstracted from a report presented by Louis P. Jeffrey to the Graduate Council of the Massachusetts College of Pharmacy in partial fulfillment of the requirements for the degree of Master of Science in Pharmacy. John T. Murphy is Pharmacist-in-Chief, Massachusetts General Hospital and Chief Consultant in Hospital Pharmacy, Massachusetts College of Pharmacy, Boston, Massachusetts. Louis P. Jeffrey is presently Pharmacist-in-Chief at the Albany Hospital, Albany, N.Y.

The authors wish to acknowledge the assistance of Profs. A. J. McBay and M. J. Stoklosa of the Massachusetts College of Pharmacy.

Experimental Data

The apparatus and equipment used in the assay of the solutions of morphine and pentobarbital consisted of a Beckman Model DU Spectrophotometer equipped with an ultraviolet light source for illumination of sample. Two cuvettes, each with an optical path of one cm., were necessary to hold the samples. All ultraviolet measurements were made between 220 and 300 *mu*, with a varying slit width. The *p*H was determined by a Beckman Model G *p*H meter. Moisture determinations were conducted with a modification of the U.S.P. Automatic Burette and Titration Assembly, by the Karl Fischer method. All other apparatus were common laboratory equipment.

Method of Preparation

Since pentobarbital is only slightly soluble in water, another solvent had to be used. A series of solvents for the pentobarbital was prepared according to the formulas given in Table I. The amount of propylene glycol was varied and the volumes of the other liquids were kept constant.

Table I. Formulas Used in Determining the Solvent for Pentobarbital

	Sample						
	1	2	3	4	5	6	
Pentobarbital	5	5	5	5	5	5	Gm.
Ethanol	8	8	8	8	8	8	ml.
Propylene Glycol	50	55	60	65	70	75	ml.
Distilled Water, a sufficient quantity to make	100	100	100	100	100	100	ml.

Samples 1, 2, 3, and 4 had undissolved material. Samples 5 and 6 were clear. In the opinion of the investigators, the proper amount of propylene glycol was established as 70 percent. It was as-

sumed that there can be no objection to 8 percent of ethanol, since for many years the Digitalis Injection U.S.P.[3] has contained approximately this concentration.

A suitable vehicle for the pentobarbital having been decided, the following formula for the alkaloidal-barbiturate solution was established.

Morphine Phosphate	0.5 Gm.
Pentobarbital	5.0 Gm.
Sodium Bisulfite	0.1 Gm.
Propylene Glycol	70.0 ml.
Ethanol	8.0 ml.
Distilled Water, a sufficient quantity to make	100.0 ml.

The sodium bisulfite acts as an antioxidant. The propylene glycol serves a dual purpose: that of solvent and that of preservative. Propylene glycol has been established as fungistatic[4] and bactericidal[5]; thus no additional preservative was added. The solution was made acid with one drop of concentrated hydrochloric acid.

In preparing the solution, the pentobarbital was mixed with the ethanol, and the propylene glycol was added to this mixture. This solution was then slightly warmed. The sodium bisulfite and the morphine phosphate were dissolved in the distilled water and were then added slowly to the propylene glycol solution.

Since many compounds contain moisture as well as water of crystallization, it was necessary that the exact amount present in the samples be determined. This was done with the Karl Fischer method. The morphine phosphate contained 2.43 percent of water, and the pentobarbital contained less than 0.01 percent of water. In the determination of the amount of barbiturate or alkaloid required for a solution of a certain strength, all calculations were based upon anhydrous morphine and anhydrous pentobarbital.

Method of Indentification

Preparation. Spectrograms of pentobarbital, 15 mcg./ml. and of morphine, 100 mcg./ml. were prepared. All calculations were based on the anhydrous compounds. The absorbance maximum for a morphine solution of *p*H 2.0 was at 285 *mu*, and the absorbance maximum for pentobarbital solution of *p*H 9.5 was at 240 *mu*. A borate buffer or hydrochloric acid was used to adjust the *p*H. Since the spectra of morphine and of pentobarbital differ significantly, it is possible to identify these substances by spectrophotometry. The propylene glycol does not absorb ultraviolet light; therefore, it does not interfere with the absorbance of the morphine and the pentobarbital.

Assay Procedure. Solution A. To 10 ml. of the solution in a 500 ml. volumetric flask, first 5 ml. of 1N sodium hydroxide solution and then approximately 475 ml. of distilled water were added. A *p*H of 2.0 was produced by the addition of 7 ml. of 1N hydrochloric acid. Distilled water was then added in sufficient quantity to make a volume of 500 ml. A solution of the ingredients above without the morphine phosphate and the pentobarbital was used as a blank. The absorbance was determined at 285 *mu*.

Solution B. Ten ml. of Solution A was placed in a 1,000 ml. volumetric flask. Ten ml. of *p*H 9.5 borate buffer solution was added, then a sufficient quantity of water to make 1,000 ml. The absorbance was determined at 240 *mu*.

Method of Assay

1. Spectrograms of morphine and pentobarbital at *p*H 2 and 9.5 were prepared with absorbance values as ordinates and wavelength values from 220 to 300 *mu* as abscissae.

2. An equation was prepared for the calibration curve from absorbance values obtained from solutions of known concentrations. The equation for the calibration curve of morphine at a wavelength of 285 *mu*, *p*H of 2, with hydrochloric acid 0.02N as a blank follows:

Concentration of morphine (mcg./ml.) = 190.64 x absorbance.

This equation was calculated from the data given in Table II.

TABLE II. RELATIONSHIP BETWEEN CONCENTRATION AND ABSORBANCE FOR MORPHINE 285 MU, PH 2.0

Concentration (mcg./ml.)	Absorbance	Concentration / Absorbance
130.0	0.680	191.18
117.0	0.614	190.55
105.3	0.549	191.95
94.8	0.495	191.52
85.3	0.448	190.40
76.8	0.404	190.10
68.9	0.363	189.81
62.0	0.327	189.60
	Average	190.64

The equation for the calibration curve of morphine at a wavelength of 240 *mu*, *p*H of 9.5, with a borate buffer of *p*H 9.5 as a blank follows:

Concentration of morphine (mcg./ml.) = 58.53 x absorbance

This equation was calculated from the data given in Table III.

TABLE III. RELATIONSHIP BETWEEN CONCENTRATION AND ABSORBANCE FOR MORPHINE 240 MU, PH 9.5

Concentration (mcg./ml.)	Absorbance	Concentration / Absorbance
30.00	0.532	56.39
27.00	0.473	57.08
24.20	0.424	57.31
21.87	0.374	58.48
19.68	0.334	58.92
17.71	0.302	58.64
15.94	0.264	60.34
14.35	0.235	61.06
	Average	58.53

The equation for the calibration curve of pentobarbital at a wavelength of 240 *mu*, *p*H of 9.5, with a borate buffer of 9.5 as a blank follows:

Concentration of pentobarbital (mcg./ml.) = 27.41 x absorbance

This equation was calculated from the data in Table IV.

TABLE IV. RELATIONSHIP BETWEEN CONCENTRATION AND ABSORBANCE FOR PENTOBARBITAL 240 MU, pH 9.5

Concentration (mcg./ml.)	Absorbance	Concentration / Absorbance
15.00	0.560	26.79
13.51	0.503	26.84
12.15	0.446	27.24
10.93	0.402	27.19
9.84	0.357	27.56
8.86	0.320	27.69
7.97	0.288	27.67
7.17	0.253	28.34
	Average	27.41

3. The unknown sample was diluted with distilled water until the desired absorbance was obtained.

4. The insertion of an absorbance value obtained, with the proper solution as a blank, into the equations previously calculated would give the concentrations.

Calculation Procedure

1. Morphine (Gm./100 ml.) =

$$\frac{(A - 0.015) \times 190.64 \times 50 \times 100}{1000 \times 1000} = 0.953\ (A - 0.015)$$

In equation 1 the concentration of morphine may be calculated by substitution for A of the absorbance value of the unknown. The 0.015 represents the absorbance due to pentobarbital (1000 mcg./ml.) at 285, *p*H 2.0. The other figures represent dilution factors.

2. Pentobarbital (Gm./100 ml.) =

$$\frac{(B - 0.018) \times 27.41 \times 100 \times 50 \times 100}{1000 \times 1000} = 13.7\ (B - 0.018$$

In equation 2 the concentration of pentobarbital may be calculated by substitution for B of the absorbance value of the unknown. The 0.018 represents the absorbance due to morphine (1 mcg./ml.) at 240 *mu*, *p*H 9.5. The other figures represent dilution factors.

Method of Sterilization

The preferable method of sterilization of a parenteral solution is by autoclaving. It was necessary, however, to determine whether autoclaving at 121°C. for five minutes resulted in degradation of the preparation. Although the solution spectrophotometrically gave variable concentration values which were lower than the standard, there was a distinct darkening in the color of the solution which indicated degradation. This darkening is probably due to the pentobarbital decomposition products. From past experience at the Massachusetts General Hospital it seems that morphine phosphate solutions do not become discolored after being autoclaved.

Thus as an alternative method of sterilization, bacterial filtration was chosen. The solution was filtered through an Ertel filter, with positive pressure, under nitrogen. This method was chosen because the viscosity of the final solution was so high that negative pressure with a different type of filtration apparatus would be extremely slow and would offer no particular advantage over the Ertel filter method. Nitrogen was used because it is inert and also sterile when compressed. All the equipment was sterilized for thirty minutes prior to use in a steam autoclave at 120°C. and was dried by being left in the autoclave with steam pressure in the jacket.

The solution was then placed in 20 ml. Neutraglass vials, the vials were fitted with rubber stoppers, and were sealed with an aluminum sealing machine, with 3 piece tear-away aluminum caps.

Conclusions

In the opinion of the investigators, a stable and compatible solution of morphine and pentobarbital is possible in a vehicle consisting of propylene glycol, ethanol, and distilled water. It is probable that this solvent vehicle might be used for various other alkaloid-barbiturate combinations.

Since the spectra of morphine and of pentobarbital differ significantly, the two substances may be identified spectrophotometrically, and a solution of them may be assayed rapidly and conveniently by the spectrophotometric method described in this paper.

Because sterilization of a solution of morphine and pentobarbital by steam sterilization causes a degradation of the solution, the investigators concluded that bacterial filtration was the preferable method of sterilization.

Summary

1. A stable solution of morphine and pentobarbital in a vehicle of propylene glycol, ethanol, and distilled water was prepared.

2. A rapid and convenient spectrophotometric method for the assay of the solution was developed.

3. Bacterial filtration, using an Ertel filter, was used as the method of sterilization of the solution.

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4. Bender, I. B. and Seltzer, S.: *Oral Surg., Oral Med., Oral Pathol. 2*:1599-1605 (1949).

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THE PHARMACY AT

Elizabeth Steel McGee Hospital

by ADELE MOYER ALLISON

ELIZABETH STEEL MAGEE HOSPITAL in Pittsburgh, Pa., recently began the operation of a new Pharmacy, a part of a $1,500,000 rebuilding program.

Push-button efficiency combined with sheer beauty in an unusual color combination of russet and green, distinguish this new Pharmacy.

Eight fluorescent lights, recessed in the acoustical pan-type ceiling brighten the room from the ceiling to the green-gray terrazzo floor.

Modern Schwartz cabinets lining two walls keep the assortment of drug bottles dust-free. File cards are inserted in specially-constructed card enclosures on the fronts of the book-shaped drawers. Nothing is visible along the walls of this new pharmacy but the symmetry of the beautiful sea-green wood cases. This is a startling contrast to the Pharmacy of an older era with its exposed shelves, many too high for the average-sized pharmacist.

A water still with a supply rating of seven and a half gallons of distilled water an hour, hangs over a new stainless steel sink with drawer and compartment space provided for pharmaceutical equipment. Heretofore, the old Magee Pharmacy had the daily supply of distilled water delivered from another part of the hospital.

Another innovation in the new Pharmacy is the double-door aluminum refrigerator with drawers giving extra space and extra protection for those drugs to be kept under refrigeration.

The centrally-located work table has twelve compartments, six on each side. In each compartment is a five-gallon carboy on a swivel which handily can be tipped for a supply of liquids needed in the daily dispensing of drugs.

For greater efficiency, this Pharmacy also has two doors. One is located near a hospital elevator thus making deliveries a simple operation. The other door—a Dutch service door—is used for the delivery of requisitions and the pick-up of drugs.

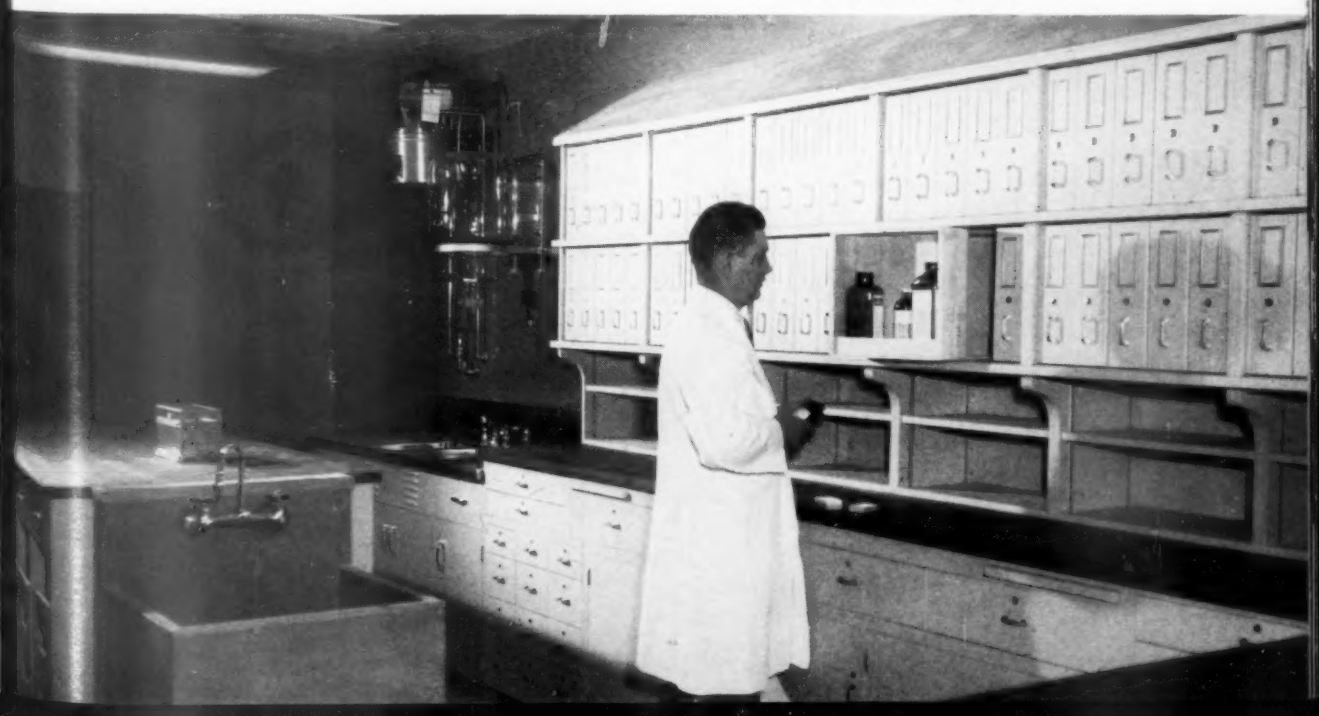
A narcotics safe with a special two-alarm system, located in the new Pharmacy, eliminates the old system of storing narcotics in the hospital's central vault.

A modern stream-line clutter-proof built in desk with shelves carrying out the two shades in the Pharmacy, completes the efficiency and orderliness of the new Pharmacy.

With a place for everything, and everything easily placed, this new Pharmacy adds looks and efficiency to Magee Hospital, member of the University of Pittsburgh Medical Center.

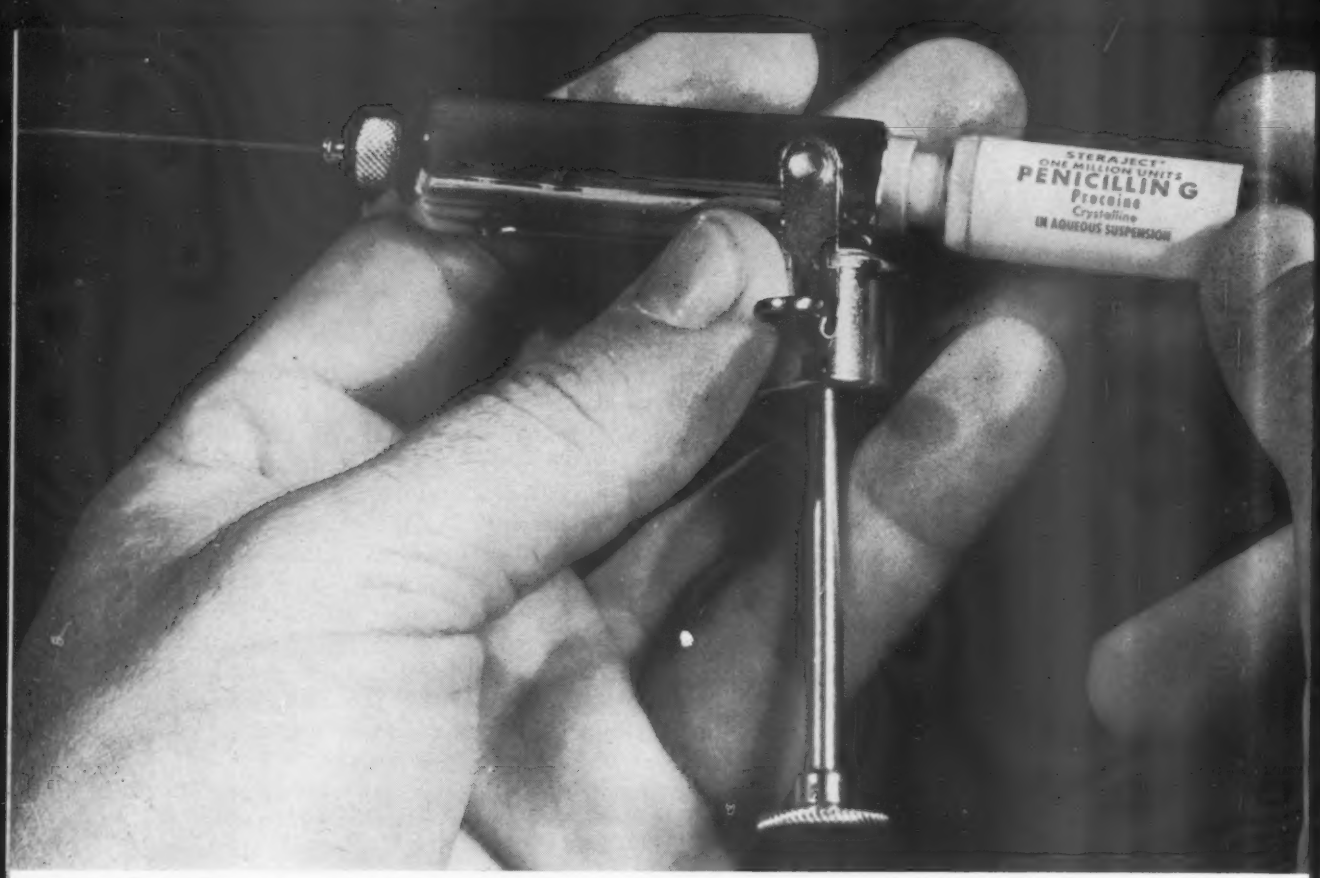
ADELE MOYER ALLISON is Public Relations Director, Magee Hospital, Pittsburgh 13, Pa.

Magee Hospital's Pharmacist, Mr. Joseph C. Steiminger, now serving his 26th year shown in the new Magee Hospital Pharmacy.



surgery performed here, usage of syringes runs

The pressing demand for beds makes it mandatory



the case for cartridge therapy

by CHARLES F. SCHRAUB

WHEN A HOSPITAL PHARMACIST is offered a new and improved method of dispensing medication he must evaluate its possible effects on the safety, efficiency, and economy of his operation with the discerning wisdom of a modern Socrates. Especially must a new method be explored and exhaustively tested if it shows promise in replacing an old and tried system.

Eighteen months ago with the proper amount of scientific doubt and intellectual curiosity, we at the 375-bed Deaconess began to use the cartridge type system for antibiotic medication. Antibiotics are used heavily here for the treatment of heart ailments, tuberculosis, and postoperative and operative surgery (mostly thoracic and abdominal). We are happy to report, at this date, an expanded use of cartridge therapy. We have found that it expedites medication with a definite cut in operating costs. It has enabled us to dispense prescriptions more efficiently and to maintain a reduction in inventories. It has greatly reduced our syringe breakage losses and relieved much of the wear and tear on a small but valuable nursing staff.

CHARLES F. SCHRAUB is Chief Pharmacist at the New England Deaconess Hospital in Boston.

Just as the name implies the cartridge system of medication utilizes a metal frame syringe, an individually wrapped, screw-on hypodermic needle, and a single-dose disposable cartridge designed especially for this type of application. No grappling with needles or tilting of vials is necessary with this method. A simple insertion of the cartridge in the frame and the proper dosage can be administered to the patient in seconds.

At present, Combiotic, which provides penicillin and dihydrostreptomycin in a ready-mixed combined form is being made and distributed in cartridges by Chas. Pfizer & Co., Inc. in a compact, ready-to-inject packet called the Steraject. Other firms supplying hospitals with cartridged antibiotics include Wyeth (Tubex) and Eli Lilly (Cartrids).

Advantages

At the Deaconess close to 62 percent of the hospital's patients are surgery cases. Many of the ill come from the Lahey Clinic and the Joslin Clinic in Boston; others come for medical care from all over the United States and from many foreign countries. Because of the high volume of

surgery performed here, usage of syringes runs high. A year and a half ago breakage of syringes approximated five percent. Now, with the advent of cartridge therapy, breakage has been reduced to about one percent with thousands of dollars in savings realized.

We have found other important advantages. Virtually no waste is encountered with the use of cartridge therapy. In the past when using multiple dose vials, a loss of about two doses per vial was common. The Pharmacy customarily allowed for this loss percentage when ordering supplies. In addition, we are able to control our inventory much more easily which in turn increases the efficiency of the Pharmacy.

The money we have saved through extensive use of cartridge therapy is perhaps best reflected in our sterilization savings. Under the old system where separate syringes were required for each dose, our cost ran from five to seven cents for each syringe sterilized. In addition to the reduction in initial syringe cost, we find we can now buy throw-away needles less expensively than we can sterilize. The adapter ring on the cartridge frame has proved quite convenient for needles of various gauges.

The high proportion of extremely serious operations imposes a heavy burden on our nursing staff. The pressing demand for beds makes it mandatory that a patient's stay be shorter. This of course requires faster and more efficient medication. Cartridge therapy has enabled our nursing staff to save precious time in administering antibiotics, and it has been significant in allowing better distribution of nurses to the patients. As a result, recovery and eventual evacuation from the hospital for patients in many instances has been swifter.

There has been no resistance by nurses to the new cartridge system once they have been properly instructed. In fact, our nurses, who had to spend valuable time preparing antibiotic mixtures on the floor, have unanimously approved of cartridges over the old vial method.

The nursing staff at Deaconess is augmented by a group of student nurses. Through the use of Steraject we find that the student acquires a surer and quicker manipulation of the syringe and thus gains more time for other nursing duties in her training.

That there will be other ethical drug producers entering this field we do not doubt. There is a need now for a complete line of cartridge therapy. Currently, only antibiotics are available. Many drugs are not yet available in cartridge form and should be. Narcotics in solution would be highly desirable in cartridge form. These tailor-made medications would be a large part of the answer to both a patient's and a hospital's needs.

Student Nurse Joan Ollerhead of New England Deaconess Hospital demonstrates the ease with which cartridge therapy may be administered to the patient.

Burton-Judson Court, residence hall at University of Chicago.

1955 INSTITUTES

CHICAGO AND ATLANTA—sites for the 1955 Institutes on Hospital Pharmacy—offer hospital pharmacists from both the North and South, the opportunity to participate in these educational programs. Again, both institutes are sponsored by the American Hospital Association in cooperation with the A.Ph.A. and the ASHP. This year the programs for the two meetings are similar but consideration has been given to the special interests and needs in each particular area. The tentative faculty and program for each of the meetings appear on the following pages. Applications for registration have now been forwarded to all members of the SOCIETY and, if you plan to attend, send your reservation to the American Hospital Association immediately. As usual, it is necessary to limit the number of registrants for this type of meeting.

In both instances, enrollees of the institutes will be housed in dormitories at the university where the meetings are being held—University of Chicago in Chicago and Emory University in Atlanta. Likewise, meals will be served in the University Cafeterias and both housing and meals can be arranged for when your application form is returned to the A.H.A.

CHICAGO

Chicago, June 13-17

With Mr. Paul Parker coordinating the program plans on the local level, hospital pharmacists

attending the Chicago institute will have an opportunity for a week filled with interesting lectures, discussions and demonstrations. Consideration has been given to the suggestions received from the members of the SOCIETY and leaders in hospital pharmacy and related fields will serve on the faculty.

The University of Chicago Clinics also offer an opportunity for those attending to see in operation a radioisotope laboratory which is under the Pharmacy Department. Also made possible by meeting in the vicinity of a hospital having a Pharmacy will be the "Gadget Show" which will be in charge of the Illinois Chapter of the ASHP.

Atlanta, August 22-26

For the Atlanta Institute, the program and local arrangements are in charge of Mrs. Lillian Price, Chief Pharmacist at Emory University Hospital; Mr. Terry Nichols, President of the Southeastern Society of Hospital Pharmacists; and Miss Johnnie Crotwell, Chief Pharmacist at Georgia Baptist Hospital, Atlanta.

Members of the Southeastern Society are taking an active part in making local arrangements and the special event for Monday evening will be in charge of the local group. The Atlanta vicinity offers opportunity for unusual sightseeing including the famous Stone Mountain, Atlanta's City Hall, and the many universities and colleges located nearby.

(*Continued on pages 148 and 149*)

ATLANTA

on hospital pharmacy

The Quadrangle on the Campus of Emory University, Atlanta

Chicago Institute Program

MONDAY, JUNE 13

PAUL F. PARKER, *Presiding*

8:00 A.M. Registration

9:00 A.M. Introduction, Greetings and Instructions to Registrants
American Hospital Association
RAY E. BROWN
American Pharmaceutical Association
ROBERT P. FISCHELIS
American Society of Hospital Pharmacists
GEORGE F. ARCHAMBAULT
University of Chicago
LOWELL COGGESHALL

9:30 A.M. Philosophy of Education
EDWARD C. ELLIOTT

10:30 A.M. Recess

10:45 A.M. Hospital Pharmacy and the Public Health
ROBERT P. FISCHELIS

SARAH H. HARDWICKE, *Presiding*

1:30 P.M. Fundamentals of Administration
WALLACE SAYRE

2:30 P.M. Recess

2:45 P.M. Departmental Application of the Fundamental Principles of Administration
ROBERT R. CADMUS, *Moderator*
WALLACE SAYRE
RAY E. BROWN
RAY M. KNEIFL
DON E. FRANCKE

7:00 P.M. Gadget Show
Supervised by PETER SOLYOM
Open House and Tour of the Pharmacy Department of the University of Chicago Clinics followed by Tea.

TUESDAY, JUNE 14

GEORGE F. ARCHAMBAULT, *Presiding*

9:00 A.M. Principles of Supervision
RAY E. BROWN

10:00 A.M. Recess

10:15 A.M. Fundamentals of Methods Engineering
WARREN GANONG

11:00 A.M. Technics of Methods Programs at the Departmental Level
MARGARET FILSON

ROBERT R. CADMUS, *Presiding*

1:30 P.M.—4:30 P.M. Hospital Pharmacy Workshop
(Leaders to be selected from faculty and those attending institute)
After Hour and Emergency Requests for Drugs
Extra Pharmaceutical Services
Records, Reports and Accounting Procedures for the Pharmacy
Pharmacy Problems in Veterans Administration Hospitals
Charges for Drugs
Therapeutics Committee and the Hospital Formulary including Interhospital Formularies and the National Formulary Service
Hospital Pharmacy Internships and Graduate Programs
Professional Responsibilities of the Pharmacist
Interdepartmental Relations
The Pharmacist's Relationship with Administration
Pharmaceutical Detailmen and Drug Exhibits
Problems of City, County and State Operated Pharmacies

ROBERT R. CADMUS, *Presiding*

7:30 P.M. Summary of Workshops

WEDNESDAY, JUNE 15

SARAH H. HARDWICKE, *Presiding*

9:00 A.M. Effective Communications
GEORGE F. HENIGAN

10:00 A.M. Recess

10:15 A.M. Demonstration and Panel Discussion: Handling and Using Radioisotopes
PAUL F. PARKER, *Moderator*
Selected members of the faculty and staff of the University of Chicago.

ROBERT CATHCART, *Presiding*

1:30 P.M. Considerations in Establishing the Pharmacy in a Small Hospital
NELSON KITSUSE

2:15 P.M. Factors in the Reorganization of a Pharmacy Department
EDWARD HARTSHORN

3:00 P.M. Recess

3:15 P.M. Standardization of Drug Usage
DAN MORAVEC

4:00 P.M. Panel Discussion:
Clinic on Pharmacy Problems in Small Hospitals
ROBERT CATHCART, *Moderator*
NELSON KITSUSE
EDWARD HARTSHORN
DAN MORAVEC

THURSDAY, JUNE 16

PAUL F. PARKER, *Presiding*

9:00 A.M. Electrolyte Solutions
J. GARROTT ALLEN

9:45 A.M. Establishing a Parenteral Solutions Program
LEO F. GODLEY

10:45 A.M. Recess

11:00 A.M. Bulk Compounding and Prepackaging
PETER SOLYOM

DON E. FRANCKE, *Presiding*

1:30 P.M. The Role of the Pharmacy Committee
WILLIAM BEIERWALTES

2:30 P.M. The Law of Hospital Pharmacy
GEORGE F. ARCHAMBAULT

3:15 P.M. Recess

3:30 P.M. Recent Trends in Drug Therapy
AUSTIN SMITH

FRIDAY, JUNE 17

GLORIA NIEMEYER, *Presiding*

9:00 A.M. Scope of Inpatient Dispensing Services
LOUIS GDALMAN

9:45 A.M. Scope of Outpatient Dispensing Services
PAUL F. PARKER

10:30 A.M. Recess

10:45 A.M. Panel Discussion:
Problems in Dispensing
DON E. FRANCKE, *Moderator*
LOUIS GDALMAN
PAUL PARKER
ROBERT CATHCART

12 Noon Luncheon and Awarding of Certificates
Hospital Accreditation
KENNETH B. BABCOCK

Chicago Faculty—Tentative

ALLEN, J. GARROTT, M.D., Professor, Department of Surgery, University of Chicago, 950 East 59th St., Chicago, Ill.

ARCHAMBAULT, GEORGE F., Chief, Pharmacy Branch Division of Hospital, U.S.P.H.S., Washington, D. C.

BABCOCK, KENNETH B., M.D., Director, Joint Commission on Accreditation of Hospitals, 660 North Rush St., Chicago, Ill.

BEIERWALTES, WILLIAM, M.D., Professor, Department of Medicine, University of Michigan, University Hospital, Ann Arbor, Mich.

BROWN, RAY E., Superintendent, University of Chicago Clinics, 950 East 59th St., Chicago, Ill.

CADMUS, ROBERT R., Director, North Carolina Memorial Hospital, Chapel Hill, N. C.

CATHCART, ROBERT, Chief Pharmacist, The Delaware Hospital, Inc., Wilmington, Del.

ELLIOTT, EDWARD C., President Emeritus, Purdue University, Lafayette, Ind.

FILSON, MARGARET, Director of Nursing, University of Chicago Clinics, Chicago, Ill.

FISCHELIS, ROBERT P., Secretary, American Pharmaceutical Association, 2215 Constitution Ave., N.W., Washington, D. C.

FRANCKE, DON E., Chief Pharmacist, University Hospital, Ann Arbor, Mich.

GANONG, WARREN, Methods Engineering Council, Pittsburgh, Pa.

GDALMAN, LOUIS, Chief Pharmacist, St. Luke's Hospital, Chicago, Ill.

GODLEY, LEO F., Chief Pharmacist, Bronson Methodist Hospital, Kalamazoo, Mich.

HARDWICKE, SARAH H., M.D., Council on Professional Practice, American Hospital Association, 18 East Division Street, Chicago, Ill.

HARTSHORN, EDWARD, Chief Pharmacist, Evanston Hospital, Evanston, Ill.

HENIGAN, GEORGE F., JR., Associate Professor of Speech, George Washington University, Washington, D. C.

KITSUSE, NELSON, Chief Pharmacist, Louis A. Weiss Memorial Hospital, 4646 North Marine Drive, Chicago, Ill.

KNEIFL, RAY M., Executive Secretary, Catholic Hospital Association, 1438 S. Grand Boulevard, St. Lous 4, Mo.

MORAVEC, DANIEL F., Chief Pharmacist, Lincoln General Hospital, Lincoln Nebr.

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PARKER, PAUL F., Chief Pharmacist, University of Chicago Clinics, Chicago, Ill.

SAYRE, WALLACE S., Professor, School of Business and Public Administration, The College of the City of New York, St. Nicholas Terrace and 139th St., New York 31, N. Y.

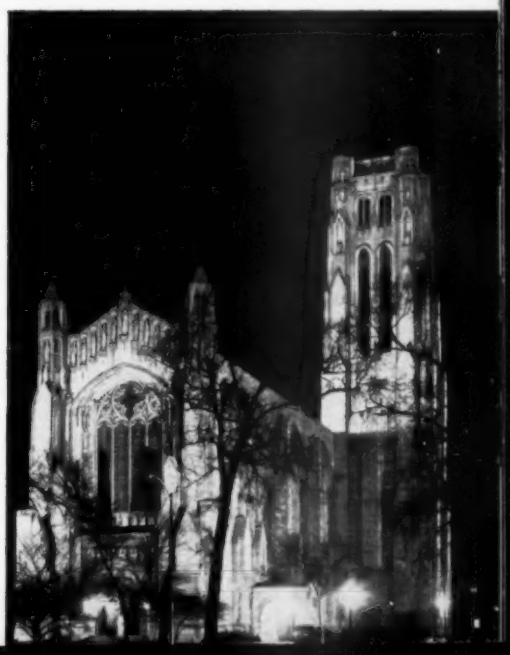
SMITH, AUSTIN, M.D., Editor, Journal of the American Medical Association, 535 N. Dearborn St., Chicago, Ill.

SOLYOM, PETER, Assistant Chief Pharmacist, University of Chicago Clinics, Chicago, Ill.

University of Chicago Clinics

Billings Hospital, University of Chicago

Rockefeller Memorial Chapel, University of Chicago



Atlanta Institute Program

MONDAY, AUGUST 22

GEORGE F. ARCHAMBAULT, *Presiding*

8:00 A.M. Registration

9:00 A.M. Introduction, Greetings, and Instructions to Registrants
American Hospital Association
ROBERT R. CADMUS

American Pharmaceutical Association
ROBERT P. FISCHELIS

American Society of Hospital Pharmacists
CLAUDE BUSICK

Southeastern Society of Hospital Pharmacists
TERRY NICHOLS

Emory University
GOODRICH C. WHITE

Georgia Hospital Association

9:45 A.M. Recess

10:00 A.M. Hospital Pharmacy and The Public Health
ROBERT P. FISCHELIS

10:45 A.M. The Role of Pharmacy Service in Hospital Care
C. JOSEPH VANCE

ROBERT R. CADMUS, *Presiding*

1:30 P.M. Fundamentals of Administration
WALLACE S. SAYRE

2:30 P.M. Recess

2:45 P.M. Panel Discussion:
Application of Fundamental Principles of Administration to Departments
ROBERT R. CADMUS, *Moderator*
WALLACE SAYRE
GROVER C. BOWLES

8:00 P.M. Social Evening
Sponsored by the Southeastern Society of Hospital Pharmacists

TUESDAY, AUGUST 23

CLAUDE BUSICK, *Presiding*

9:00 A.M. Effective Communications
GEORGE F. HENIGAN

10:00 A.M. Handling and Using Radioisotopes
Physician—CHARLES HUGULEY
Chemist—WEI-CHEN LIU
Pharmacist—PAUL PARKER

11:00 A.M. Recess

11:15 A.M. The Hospital Pharmacist's Responsibility in a Teaching Program
GROVER C. BOWLES

ROBERT R. CADMUS, *Presiding*

1:30—4:30 Hospital Pharmacy Workshop
(Leaders to be selected from faculty and those attending institute)
Extra Pharmaceutical Services
Records, Reports and Accounting Procedures for the Pharmacy
Pharmacy Problems in V.A. Hospitals
Charges for Drugs
Therapeutics Committee and the Hospital Formulary
Hospital Pharmacy Internships and Graduate Programs
Professional Responsibilities of the Pharmacist
Interdepartmental Relations
The Pharmacist's Relationship with Administration
The Pharmaceutical Detailmen and Drug Exhibits

ROBERT R. CADMUS, *Presiding*

7:30 P.M. Summary of Workshops

WEDNESDAY, AUGUST 24

GROVER C. BOWLES, *Presiding*

9:00 A.M. Steps in Establishing a Hospital Pharmacy
WILLIAM TAYLOR

10:00 A.M. Requirements for Good Pharmacy Service in Small Hospitals
CLAUDE BUSICK

10:45 A.M. Recess

11:00 A.M. Standardization of Drug Usage
I. THOMAS REAMER

LILLIAN PRICE, *Presiding*

1:30 P.M. Pharmacy After Hours Service
GILBERT COLINA

2:30 P.M. Utilization of Non-Professional Personnel in the Pharmacy

3:15 P.M. Recess

3:30 P.M. Panel Discussion:
Clinic on Pharmacy Problems in Small Hospitals
ALBERT P. LAUVE, *Moderator*
CLAUDE BUSICK
GILBERT COLINA

THURSDAY, AUGUST 25

TERRY NICHOLS, *Presiding*

9:00 A.M. Electrolytic Solutions
ISAAC TAYLOR

10:00 A.M. Establishing a Solution Program
WILLIAM TAYLOR

10:45 A.M. Recess

11:00 A.M. Bulk Compounding and Prepackaging
EDWARD SUPERSTINE

SARAH H. HARDWICKE, *Presiding*

1:30 P.M. The Role of the Pharmacy Committee
C. C. AVEN

2:30 P.M. The Law of Hospital Pharmacy
GEORGE F. ARCHAMBAULT

3:15 P.M. Recess

3:30 P.M. Recent Trends in Drug Therapy
AUSTIN SMITH

FRIDAY, AUGUST 26

GLORIA NIEMEYER, *Presiding*

9:00 A.M. The Scope of Inpatient Dispensing Services
ALBERT P. LAUVE

10:00 A.M. The Scope of Outpatient Dispensing Services
JOE SYKES

10:45 A.M. Recess

11:00 A.M. Panel Discussion:
Problems in Dispensing
JOHNNIE CROTWELL, *Moderator*
ALBERT P. LAUVE
JOE SYKES
GROVER C. BOWLES

JOHNNIE CROTWELL, *Presiding*

1:30 P.M. Combining the Duties of Pharmacist and Administrator
JACK C. KIRKLAND

2:15 P.M. Necessary Controls in Manufacturing in the Hospital Pharmacy
HERBERT L. FLACK

3:00 P.M. Recess

3:15 P.M. Accreditation
SARAH H. HARDWICKE

5:30 P.M. Dinner and Awarding of Certificates
The Role of the Community in a Public Health Program
WILLIAM G. HOLLISTER

Atlanta Faculty—Tentative

ARCHAMBAULT, GEORGE F., Pharmacist Director, Chief, Pharmacy Branch, Division of Hospitals, U.S.P.H.S., Washington, D. C.

AVEN, C. C., M.D., Specialist in Radiology, Georgia Baptist Hospital, Atlanta, Ga.

BOWLES, GROVER C., Chief Pharmacist, Baptist Memorial Hospital, Memphis, Tenn.

BUSICK, CLAUDE L., President, American Society of Hospital Pharmacists, St. Joseph's Hospital, Stockton, Calif.

CADMUS, ROBERT R., M.D., Director, North Carolina Memorial Hospital, Chapel Hill, N. C.

COLINA, GILBERT, Chief Pharmacist, Mercy Hospital, Charlotte, N. C.

CROTWELL, JOHNNIE, Chief Pharmacist, Georgia Baptist Hospital, Atlanta, Ga.

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HENIGAN, GEORGE FRANCIS, Associate Professor of Speech, George Washington University, Washington, D.C.

HOLLISTER, WILLIAM G., M.D., Mental Health Consultant, Region 4, U.S.P.H.S., Atlanta, Ga.

HUGULEY, CHARLES M., JR., M.D., Hematologist, Emory University Hospital, Emory University, Ga.

KIRKLAND, JACK, Administrator, Tift County Hospital, Tifton, Ga.

LAUVE, ALBERT P., Chief Pharmacist, Mercy Hospital, New Orleans, La.

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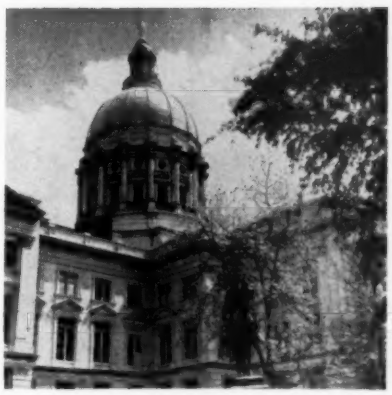
TAYLOR, WILLIAM, Chief Pharmacist, North Carolina Memorial Hospital, Chapel Hill, N. C.

VANCE, C. JOSEPH, Administrator, South Highlands Infirmary, Birmingham, Ala.

WEI-CHEN LIU, Ph.D., Southern College of Pharmacy, Atlanta, Ga.

Emory University Medical Center

Glenn Memorial Church, Emory University



State Capitol, Atlanta

Lillian Price
Terry Nichols
Johnnie Crotwell

THE SIXTEENTH GENERAL ASSEMBLY of the International Pharmaceutical Federation will meet in London, England, September 19-23, 1955. The meetings will be presided over by Sir Hugh Linstead who was elected to the presidency of the F.I.P. (Fédération Internationale Pharmaceutique) at its last meeting in Paris in 1953. Arrangements for the 1955 Federation meeting are being made by The Pharmaceutical Society of Great Britain.

In conformity with its objectives of "the development of pharmacy in the international sphere as a profession and as an applied science," the Federation has scheduled a series of symposia on scientific and professional subjects. The selected topics will be discussed by experts in the respective fields and opportunity will be afforded for full discussion by the attending members.

The headquarters of the Federation will be in the Senate House, University of London. The opening and closing sessions will be in Friends House, Euston Road where simultaneous translation service for English, French, and German will be available.

Registration

It is imperative that those who wish to attend this year's Federation meeting register early. The number of registrants who can be accepted is *limited to 1,000;* more than 2,000 were present at the last F.I.P. meeting in Paris. When the limit of registrants has been accepted, it will be necessary to refuse further applications.

Application forms for the meeting of the Federation may be obtained from the Chairman of the SOCIETY's Committee on International Hospital Pharmacy Activities, Dr. Don E. Francke, University Hospital, Ann Arbor, Michigan. The Boersma Travel Agency of Ann Arbor has been selected to assist members of the SOCIETY and other interested persons in planning their travel and hotel arrangements.

The registration fee for the Congress is $20, which includes the Banquet, a Dance, the Excursion, the Reception, and the evening performance at Festival Hall. The excursion will take the form of a trip on the Thames River from Festival Hall pier to Greenwich, where tea will be taken and delegates shown The Royal Naval College and The National Maritime Museum. In addition, a number of visits to pharmaceutical manufacturing establishments will be organized. The Association of British Pharmaceutical Industry will offer an exhibition showing the contributions made by the industry to medical science. This exhibition will be held in the Senate House. Opportunity will also be afforded to visit many of the historical sites in and around London.

Postage Stamp to be Issued

A special commemorative postage stamp has been authorized for the 16th General Assembly of the International Pharmaceutical Federation. Stamp collectors can have a specimen of the postmark by sending an addressed envelope and an international reply-paid coupon to Mr. D. F. Lewis, Secretary of the Federation's organizing committee at 17 Bloomsbury Square, London, W.C.1.

Provisional Program

At this time only a provisional program for the meetings of the Federation has been adopted. The titles of the papers to be presented before the General Assembly are not yet available. While outlines of the programs to be presented before the University Section and the Section on Hospital Pharmacists have been drawn up, arrangements for speakers before the other sections of the F.I.P. are still in the process of being completed. The following is the program information which is available at this time:

Sunday 18 September

10.00-20.00	Registration of Delegates
10.00	F.I.P. Council Meeting
14.30	F.I.P. Council Meeting

Monday 19 September

09.30	Opening of General Assembly, with Presidential Address
11.15	Science Papers
14.30	Professional Papers
15.15	General Assembly (Business session)
19.30	Reception

Tuesday 20 September

09.30	Science Symposium
09.30	Meetings of Sections
14.30	Meetings of Sections
18.00	Meeting of l'Union Mondiale de l'Histoire de la Pharmacie

Wednesday 21 September

09.30	Science Symposium
09.30	Meetings of Sections
14.30	Science Symposium
14.30	Meetings of Sections
16.30	F.I.P. Council Meeting
19.00	Ballet, Festival Hall

Thursday 22 September

09.30	Science Symposium
09.30	Meetings of Sections
14.00	Excursion

Friday 23 September

09.30	General Assembly
16.30	Close of General Assembly
18.30-01.00	Banquet and Dance

Section Meetings

In addition to the General Assemblies of the Federation in which all pharmacists will participate,

Photo at right shows Big Ben and Westminster Abbey.

INTERNATIONAL PHARMACEUTICAL FEDERATION meets in London

Piccadilly Circus (above) and Buckingham Palace are sites of attraction for visitors to London.

meetings will be arranged for various groups of specialists. Thus sectional programs will be arranged for hospital pharmacists, directors of control laboratories, editors of pharmaceutical journals, secretaries of pharmacopoeia commissions, pharmacognosists, and for the World Union of the History of Pharmacy. The meetings of the Sections will be held in the Senate House of the University of London.

Scientific Meetings

The University Section which is organizing the general science sessions has decided that the four meetings shall take the form of symposia, each consisting of a discussion on recent advances in the subjects which have been selected. Invited speakers will read papers on these subjects and a general discussion on them will follow. No provision is being made for the reading of original science papers and members are therefore asked not to submit such papers.

1. The Pharmacy of Blood, Blood Products and Blood Substitutes

a. Blood clotting mechanisms
b. Blood products
c. Particle size of plasma substitutes

2. Recent Advances in Pharmaceutical Analysis

a. Infra-red spectroscopy
b. Recent advances in chromatography
c. Electrometric titrations

3. Ion Exchange

a. Clinical applications
b. Analytical applications
c. Other technical applications

4. Tests for the Sterility of Pharmaceutical Preparations

a. Statistics of the design and interpretation of tests
b. Choice of media
c. Antagonists and inactivators

Section of Hospital Pharmacists

The Section of Hospital Pharmacists will hold three general meetings under the sponsorship of the International Pharmaceutical Federation. Two of these sessions will take the form of symposia, while the third session will be for the presentation and discussion of professional papers. Those who wish to present a paper on a professional subject should submit a copy of it by June 1 to the Secretary-General of the Section, Mr. Herbert S. Grainger, Westminster Hospital, London S.W. 1. From among the papers submitted a selection will be made of those deemed to be of the greatest general interest and these will be presented to the Section.

Officers of the Section of Hospital Pharmacists include Dr. Jean Cheymol of France, President; Dr. Kurt Steiger of Switzerland, Vice-President; and Mr. Herbert S. Grainger of Great Britain, Secretary-General. Serving as hosts to the hospital pharmacists will be the Guild of Public Pharmacists, the association of hospital pharmacists in Great Britain.

The provisional program of the Section of Hospital Pharmacists is as follows:

Tuesday 20 September

12.00 Meeting of the Council of the Section
14:30 First Session
Symposium on Injectible Solutions
1. Pyrogens M. Dorche of France
2. Preparation of Parenteral Solutions Dr. Soos of Austria
3. Closures and Containers Dr. Steiger of Switzerland

Wednesday 21 September

09:30 Second Session
Symposium on Absorption of Medicaments by Various Routes of Administration
1. Introduction Prof. Valette of France
2. Absorption of Ointment Bases Mr. Hadgraft of Britain
3. Absorption by the Rectal Route Speaker to be selected

14.30 Third Session
Papers on Professional Subjects
Communications

17.00 Meeting of the Council of the Section of Hospital Pharmacists

British Pharmaceutical Conference

Another meeting, which should not be confused with the International Pharmaceutical Federation, is the British Pharmaceutical Conference which will be held in Aberdeen, Scotland August 29 to September 2.

Several American pharmacists attended the British Conference in 1953 and were greatly impressed by the splendid organization of the meetings, the high calibre of the program, and the warmth and friendliness of their welcome.

It is probable that several will wish to attend the Conference this year. Although information on the program is not yet available, it will be issued in the near future. Applications for those desiring to attend the British Conference will be available from the Editor of THE BULLETIN ASHP, University Hospital, Ann Arbor, Michigan.

The spirit of the British Conference is perhaps best exemplified by a British pharmacist who was far from his homeland when the last Conference was held. In addressing the Editor of *The Pharmaceutical Journal*, the writer said:

Have we missed anthing by our absence? Very little, it would appear—our local newspaper (circulation a mere 5000) has already reported that the Branch Representatives 'agreed to disagree' on the question of English *v.* Latin, and in four or five weeks' time *The Journal* will bring us a full report of their deliberations, the science papers, the symposium session, and, we hope, several pages of pictures. What, then, do we lack? I will tell you. We miss only the spirit that makes the Conference. The spirit of unity and common purpose that creates and sustains the world-wide bond of pharmacy. The spirit that defies adequate description: just as we can revisualize a fire without recapturing its warmth, so we can remember a Conference—but its spirit cannot be rekindled. The spirit that calls to the authors of papers, and is all the reward the organizers hope for. The spirit that is for those few days the very essence of pharmacy. That is something we absentees feel. That is all that is missing. And that is why, in September, 1963, when the one-hundredth British Pharmaceutical Conference meets in London, if it is humanly possible, I shall be there.

Pharmaceutical Students' Federation

The International Pharmaceutical Students' Federation, which is sponsored by the F.I.P., will hold its Fourth Conference in Vienna, Austria from August 3 to 12, 1955. Accommodations will be in The Studentenheim, a modern student hostel in Vienna. More than 200 students from all over the world are expected to attend.

The program includes several excursions and a boat trip down the Danube, visits to pharmaceutical and other manufacturing plants, and several social events. The student delegates will also hold General Assemblies and Council Meetings at which papers will be presented and the business affairs of the Students' Federation transacted. American pharmacy students who are interested in participating in these meetings should contact Mr. Zeno Wolf, Chairman of the Conference Reception Committee, A.F.O.P., Kolingasse 19/4, Vienna 9, Austria before July 1.

Aerial view of University of London Center and the British Museum (right) before the Blitz. The Senate House where the FIP meetings will be held is the large building in the center of the photo.

ABOVE: *Members of panel on Administrative Problems and Policy of the Hospital Pharmacy.* **LEFT TO RIGHT:** *C. J. Vance, Paul Hudson, Moderator, Dorothy Haskins, Carl Brown, and Robert Bogash.* **BELOW:** *Group photo of those attending Seminar.* **RIGHT:** *C. J. Vance, Sister M. Teresa Bramsiepe and Cedric Jeffers.*

TEXAS SEMINAR

by JEAN WATSON MICHAELS

THE SEVENTH ANNUAL SEMINAR for hospital pharmacists was held at the University of Texas College of Pharmacy, Saturday and Sunday, February 19 and 20. It was conducted by the College of Pharmacy and the University of Texas Division of Extension in cooperation with the Texas Society of Hospital Pharmacists. Eighty-nine registrants, including hospital pharmacists from nine states and Washington, D.C., participated.

The distinguished visiting speakers included: Dr. George F. Archambault, U. S. Public Health Service, Washington, D. C., who opened the first session with "The Future of Hospital Pharmacy." He told of seeing radioactive isotopes dispensed from the Pharmacy at the University of Chicago Clinics and predicted that this service would, in the near future become a regular function of the hospital pharmacy. Dr. Archambault is the president of the AMERICAN SOCIETY OF HOSPITAL PHARMACISTS.

Following Dr. Archambault, Sister M. Teresa Bramsiepe, O.S.F., gave a pharmacist's viewpoint on "Pharmacy and Central Supply Combination." She stressed that the pharmacist should be willing to take the responsibility, if the need presented itself, pointing out the many services the pharmacists can render to the hospital without getting into other departments. Sister Teresa is Chief Pharmacist of St. Anthony Hospital, Oklahoma City, Oklahoma, and is now serving as Chairman of the ASHP Membership Committee for Religious Hospitals.

Mr. A. L. Raithel, an investigator for the Texas State Board of Pharmacy, spoke to the group on "The Role of the Pharmacist in Narcotic Control in the Hospital." Since many of the registrants were new in hospital pharmacy, his talk helped to clarify the confusion that existed in the minds of some of those present as to what class the different narcotics should be included for dispensing and purchasing purposes in a hospital pharmacy. His speech was followed with a panel on "Narcotic, Alcohol, and Drug Control in the Hospital," with Mr. Jack McDaniel, Chief Pharmacist, Providence Hospital, Waco, serving as moderator.

JEAN WATSON MICHAELS is Assistant Chief Pharmacist at the University of Texas Student Health Service, Austin, Texas, and Secretary of the Texas Society of Hospital Pharmacists.

Saturday afternoon's session was opened by Miss Dorothy Haskins, R.N., who is the Director of Nursing Service of Parkland Hospital in Dallas. She spoke on "Inter-Departmental Relationship," giving the group some good ideas on how to improve the pharmacy-nursing team to benefit the patient.

"An Administrator-Pharmacist Looks at Today's Hospital Pharmacy" was the subject discussed by Mr. C. Joseph Vance, Administrator, South Highlands Infirmary of Birmingham, Alabama, and President of the Alabama Hospital Association. Mr. Vance stated that the administrator wants to have a pharmacist, not just a pharmacy degree, when he hires a pharmacist. He stressed the fact that the pharmacist must be willing to take responsibilities in the hospital other than just those involved in filling a prescription.

The session was closed with a panel discussion on the "Administrative Problems and Policies of the Hospital." This panel was moderated by Mr. Paul Hudson, VA Hospital, Houston.

The scientific section of the Seminar began Sunday morning with a speech by Dr. David T. McMahon, Jr. of San Antonio. He spoke on "Drugs Used in Cardio-Vascular Emergencies." He discussed the emergencies that might arise in this type of case and mentioned several drugs that could be used in each instance.

Dr. Donald Kroeger, Associate Professor of Pharmacology, told the group of the newer advances made in neuropharmacology. Dr. Kroeger is on the staff of the University of Houston.

Following Dr. Kroeger was Dr. J. G. Rodarte of Scott and White Hospital in Temple. He told the group of "The Use of the Anti-Thyroid Drugs and Radioactive Iodine" in thyroid conditions.

The scientific section was closed with a panel discussion on "New Drugs and Emergency Drug Orders," with Mr. Arthur Radcliffe, Hermann Hospital of Houston acting as moderator.

Mr. Robert C. Bogash, Director of Pharmacy Department, of Lenox Hill Hospital, New York, N. Y. spoke on "The Proposed National Formulary Service." He told of the progress the national SOCIETY has made toward the possibility of setting up a formulary service for hospitals, and of the plans for the future.

Mr. Cedric M. Jeffers, Scott and White Hospital, Temple, then told the group about "The Evolution of a Hospital Formulary" for Scott and White Hospital. He mentioned some of the problems which confronted him and how he overcame them during the course of the project.

The seminar was closed with a panel discussion of "Formularies and the Therapeutics Committee." Mr. Claude Busick, President- Elect of the ASHP served as the moderator.

therapeutic TRENDS

edited by LEO F. GODLEY

Imferon and Intramuscular Iron

Imferon, a new intramuscular dextran complex iron compound and its application in anemia of pregnancy was reported in *Brit. Med. J.* 2:1257 (Nov. 27) 1954. All of 50 women with varying degrees of anemia of pregnancy responded well to therapy with Imferon. A quantity equivalent to 500 mg. of elemental iron was administered weekly. The iron utilization was good as was evidenced in the hemoglobin increase (0.3 Gm. per 100 mg. injected iron).

Imferon was thought to be better than intravenous saccharated iron oxide because of its higher concentration of iron thus making fewer injections necessary. In addition to anemia of pregnancy, injectable iron should be limited to cases where intolerance or refractoriness to oral iron is found or in situations, such as pre-operative, where more rapid response is desired than can be obtained with oral therapy.

There were no reactions, local or general, accompanying this therapy. The material used in this study was supplied by Benger's Ltd.

Placental Serum in Rheumatoid Arthritis

Placental serum in rheumatoid arthritis therapy was reported by Tufts in *Wis. Med J. 53*:615 (Dec.) 1954. The collection of the blood and preparation of serum must be done carefully to insure sterility but expensive equipment is not necessary.

Placental serum along with other usual agents was successfully used in the treatment of 16 of 22 patients with moderately advanced rheumatoid arthritis. Slight improvement was noted in four others. Improvement was usually noted in a few weeks and remissions lasted from three weeks to two years. One child was considered terminal although antibiotics, cortisone, salicylates and whole blood were being used. After five weeks of therapy with placental blood serum, she could walk with some assistance.

Dosage used was 5 ml. intramuscularly twice a week for two weeks, then once a week for eight weeks. Freeze dried material reconstituted with water was effective. The encapsulated solids taken orally were not effective.

Thiocymetin—A New Antibiotic

Thiocymetin, a new antibiotic, is a white crystalline powder, neutral in reaction and soluble in water. It is stable after boiling for several hours in neutral solution.

Feinsilver published a clinical evaluation of Thiocymetin in *Am. Practitioner and Dig. Treatment 6*:34 (Jan.) 1955. It was found effective, in the laboratory, against infections produced by *Streptococcus pyrogenes, Pasteurella boviseptica, Klebsiella pneumoniae,* and *Brucella melitensis.* This report deals with results obtained in 54 cases as follows: 35 bronchitis, 10 pneumonia, 4 bronchiectasis, 2 cystitis, 1 ethmoiditis, 1 sinusitis, and 1 pharyngitis. Toxicity was relatively low consisting of erythrocyte reduction and diarrhea. Improvement was noted in all but two cases.

The success obtained by this study leads the author to comment that Thiocymetin will be a valuable addition to our armamentarium of antibiotics. Thiocymetin was supplied by Winthrop-Stearns Inc.

Compound S—A New Corticosteroid

Compound S acetate is 17-hydroxy-11-desoxycorticosterone 21-acetate (Reichstein's Substance S). This study included 18 patients: 3 with gout, 3 with carcinoma, 2 with lupus erythematosus, 2 with psoriasis, 1 with rheumatoid arthritis, 1 with atopic dermatitis, 1 with multiple sclerosis, 1 with migraine, 3 with bronchial asthma, and one with dermatitis. The study was conducted by Peters and published in *Ill. Med. J. 107*:64 (Feb.) 1955.

The usual initial dose of Compound S was 12.5 mg. intramuscularly daily. These patients had

failed to respond to other therapy. On Compound S, there was an improvement noted in all cases. Some experienced a remission and it was sometimes possible to discontinue therapy. Local application of 1-1.5 percent ointment cleared psoriasis lesions that would not respond to systemic therapy. There were no significant toxic reactions.

Allium and Occium Substances: Antitubercular Agents

In vitro studies by Gupta and Viswanathan at the University of Delhi in India indicate that substances isolated from *Allium schoenoprasum* and *Allium cepa* and from *Occium sanctum* had considerable antitubercular activity.

The substance from Allium s. was only slightly less active than streptomycin to strains sensitive to that agent, and the plant substance was equally effective against streptomycin-resistant strains.

The activity of the oily substance from *Occium s.* was greatly affected by the number of days of culture incubation. On tubes incubated 4-6 days, its activity was five times greater than isoniazid; but on tubes incubated 8-14 days, the activity was four times less.

This laboratory study appeared in two articles by the same authors in *Antibiotics and Chemotherapy 5*:18 and 22 (Jan.) 1955.

U-0045—An Ophthalmic Anesthetic

U-0045 is bis-[*Beta*-(o-methoxyphenyl)-isopropyl]-amine. Scheie *et al* in Philadelphia recommend its trial in all ocular surgery requiring retrobulbar anesthesia. Because of its irritating qualities it is not recommended for infiltration or subconjunctival injection. This report appeared in *Arch. Ophthalmol. 53*:177 (Feb.) 1955.

The authors have used U-0045 in more than 540 eyes. The retrobulbar injection of 0.75 ml. of 0.5 percent U-0045 with 0.75 ml. of 10 percent procaine containing hyaluronidase has produced excellent results. There was a great reduction of post-operative pain, restlessness, and nausea after this type of anesthesia; and there were no signs of untoward effect. Procaine is used in combination with U-0045 because it has a quicker onset of action and produces more complete akinesia of the extraorbital muscle.

U-0045 was supplied by Upjohn.

Cinnamycin—A New Antibiotic

Cinnamycin, a polypeptide antibiotic, is derived from *Streptomyces cinnamoneus*. It is active *in vitro* against streptomycin-resistant *M. tuberculosis var hominis* H-37RVR and *Clostridium botulinum*.

This report is concerned chiefly with the acute toxicity of cinnamycin and was published in *Antibiotics and Chemotherapy 4*:1242 (Dec.) 1954. The LD_{50} of cinnamycin acetate intraperitoneally was 5-10 mg./Kg. in mice and for a less pure salt (HCl) the LD_{50} was 8-10 mg./Kg.. In some dosages, a cutaneous hyperemia was noted which might suggest an effect upon the circulatory system. There was no CNS involvement noted.

Methyl-Ethyl Glutarimide—A Barbiturate Antagonist

Methyl-ethyl glutarimide (NP-13) has been successfully employed as an antidote in barbiturate poisoning. This report by Harris of the Anesthesia Dept. of Guy's Hospital in London appeared in *Lancet* (London) *1*:181 (Jan. 22) 1955; and is concerned with the use of NP-13 as an anesthesia terminating agent in connection with thiopentone anesthesia.

Fifty-seven psychiatric patients who were prepared for electroshock therapy with thiopentone were given 50 mg. of NP-13 intravenously after clonic convulsions had subsided and in all cases the anesthesia was rapidly and comfortably terminated. It was also used to terminate the thiopentone anesthesia in six other patients who had received orthopedic manipulations. In both of these groups after recovery by NP-13, the patients often lapsed into a natural sleep. NP-13 was not effective against cyclopropane anesthesia.

Psoralen For Vitiligo

Psoralen derivatives (8-methoxypsoralen, 5-methoxypsoralen, and 8-isoamylene-oxypsoralen) are crystalline constituents isolated from the fruit of Ammi majus Linn. For centuries, the Egyptians have employed a powder prepared from this fruit for the treatment of vitiligo. (Vitiligo is a skin disease attended with the formation of smooth light-colored patches.)

This study appeared in *Arch. Dermatol. 71*:14 (Jan.) 1955 and consisted of a series of 11 negro patients with vitiligo. They were treated with ointments of psoralen derivatives and four of them also received oral therapy. Two patients were considered cured; in four patients the results were considered good; two had a moderate response; two failed to return for follow-up study; and one patient could not tolerate the drug. It did not appear that oral therapy or combined therapy gave more desirable results than the local therapy alone. Except in one patient, reactions were slight or absent; and general hyperpigmentation was not observed.

Material for this study was supplied by Pharmaceutical Division, Bioproducts, Oregon Ltd., Warrenton, Ore.

timely drugs

Achromycin IM

. . . (tetracycline, Lederle) has been introduced by Lederle Laboratories. Achromycin Intramuscular can be administered without undue patient discomfort or irritation at the site of the injection. It possesses all the advantages of Achromycin over earlier broad-spectrum antibiotics such as greater solubility, more rapid diffusion into body tissues and fluids, and rare occurrence of side effects; as well as rapid therapeutic action when administered by intramuscular route. Clinical studies have shown that where oral medication is not practical, effective therapeutic blood levels are readily obtained with Achromycin Intramuscular.

Achromycin Syrup

. . . (tetracycline) is a flavored, stable syrup available from Lederle Laboratories Division, American Cyanamid Company. This form of the broad spectrum antibiotic is ideal for oral use in all age groups, especially for younger patients who have difficulty in taking tablets or capsules. Each teaspoonful (5 ml.) of cherry flavored Achromycin syrup contains 125 mg. of tetracycline hydrochloride, 0.08 percent methylparaben, 0.02 percent propylparaben and one percent alcohol.

Achromycin Pharyngets and Troches

. . . are two new, highly palatable preparations for the control of superficial infections of the mouth and throat. Achromycin is a product of Lederle Laboratories Division, American Cyanamid Company.

Each pharynget and troche contains 15 mg. of Achromycin (tetracycline hydrochloride) and is designed to dissolve slowly in the mouth, providing lasting therapeutic saliva concentrations of the broad spectrum antibiotic. Both may be prescribed in conjunction with systemic Achromycin therapy in severe oral infections.

Achromycin troches are peppermint flavored, will not crumble, and are packaged in bottles of 25 and 250. Achromycin pharyngets are cherry flavored, individually wrapped in cellophane, and foil covered in boxes of ten.

Bevidoral Filmtabs

. . . (Abbott's Vitamin B_{12} with intrinsic factor concentrate) supply a specific therapeutic agent for convenient oral treatment of pernicious anemia and for primary treatment and maintenance therapy of macrocytic anemia. Bevidoral Filmtabs combine vitamin B_{12} activity with sufficient intrinsic factor to facilitate absorption and utilization of vitamin B_{12} from the gastrointestinal tract.

Two Bevidoral Filmtabs (representing 1 U.S.P. oral unit) daily provide increased hemoglobin concentration, elevation of erythrocyte count and optimal reticulosis. Increase in strength, a feeling of well-being, disappearance of glossitis and sore tongue usually are apparent on about the fifth day of therapy. The sensation of dizziness and other neurologic manifestations usually disappear or are markedly decreased within fourteen days after therapy has been started.

Butibel

. . . is a new antispasmodic-sedative introduced by McNeil Laboratories. Butibel is a combination of Butisol sodium, 10 mg. and natural belladonna extract, 15 mg. per tablet or teaspoonful of the elixir. It has the advantage of each therapeutic agent having approximately equal durations of action. Safe relaxation is provided by Butisol sodium without the development of tolerance or the hazard of accumulation associated with the prolonged use of phenobarbital.

Calcidrine Expectorant Troches

. . . (calcium iodide and ephedrine compound, Abbott) with dihydrocodeinone, are indicated in coughs due to simple acute and subacute bronchial infections. Calcidrine troches, a product of Abbott Laboratories, are candy-like in form, apricot in flavor, combine sedative and expectorant effects with a prolonged soothing action on the irritated mucous membrane of the throat. The hard candy base causes the troche to dissolve slowly and release the active ingredients gradually.

Calcidrine preparations are contraindicated in certain cases of thyroid disease where iodine is contraindicated.

Doriden

. . . is a new oral nonbarbiturate hypnotic-sedative, developed by Ciba Laboratories. Chemically, Doriden is *alpha*-ethyl-*alpha*-phenyl-glutarimide. It is not a narcotic and is also chemically different from chloral hydrate, bromides and paraldehyde. When Doriden is given as recommended, its action is characterized by rapid onset (15 to 20 minutes), excellent depth of hypnosis, and four to eight hours of physiologic sleep.

Doriden has a wide range of indications as a short-acting hypnotic and sedative. It is particularly recommended for the following:

Insomnia: Doriden, in hypnotic dosage, is usually sleep-producing in 15 to 30 minutes and thus is valuable for persons who have difficulty in getting to sleep. Since Doriden is short-acting, it is also effective for insomniacs who awaken during the early morning hours; some of these cannot use a long-acting hypnotic either then or the night be-

fore because it might leave them drowsy the next day. When used in recommended doses, Doriden does not generally cause hangover or mental fog. The recommended dosage is 0.5 Gm. Doriden one-half hour before bedtime (0.25 Gm. may be adequate for some patients). It may be taken when needed but not less than four hours before arising.

Pre-Surgery Sedation: The recommended dosage for this purpose is 0.5 Gm. the night before surgery; 0.5 to 1.0 Gm. one hour before anesthesia.

Daytime Sedation in Anxiety-Tension States (such as hypertension, menopause, coronary thrombosis, anxiety neurosis, hysteria, epilepsy, thyroid disease, etc.): Doriden has been successfully used for daytime sedation in a variety of nervous conditions. The dosage can usually be so adjusted that Doriden does not cause drowsiness, yet has a calming effect. Doriden rarely produces excitation. The recommended dosage for this purpose is 0.25 Gm. three or four times daily after meals.

Few side effects were noted in studies covering 1,000 cases. As with all hypnotic-sedatives, occasional cases of nausea have been noted. Patients all were able to continue medication; occasionally antacids were required. No other gastrointestinal disturbances were reported. Skin rash may occur infrequently, in which case Doriden should be withdrawn.

Erythrocin Ointment

. . . (erythromycin, Abbott) is a one percent ointment especially recommended against stubborn staphylococcic and streptococcic infections of the skin. Erythrocin ointment is indicated in primary infections of the skin including pyoderma, ecthyma, sycosis vulgaris, impetigo, paronychia and furuncle as an adjunct to indicated surgical procedures. It is also used in secondarily infected dermatoses and other skin lesions, surface burns and wounds, acne, otitis externa and scabies.

Flaxedil Gallamine Triethiodide

. . . a synthetic curare-like compound, is available from Lederle Laboratories Division, American Cyanamid Company. It possesses all the advantages of natural curare, but is easier to administer and much freer from disturbing reactions. It relaxes muscles by blocking the transmission of nerve impulses from nerve endings to skeletal muscles. The drug allows the administration of smaller amounts of general anesthesia, and by permitting the surgeon freedom of action in the manipulation of skeletal muscles and viscera, increases the speed with which operative procedures may be completed. In the new potency of 100 mg. per ml., Flaxedil can be mixed with sodium Pentothal without unnecessary addition to the liquid content of the intravenous medication.

Hypaque Sodium

. . . is an improved radiopaque medium for excretion urography. It is sodium 3,5-diacetamido-2,4,6-triiodobenzoate which contains 59.87 percent iodine. Hypaque sodium is a highly water soluble white crystalline solid. The *p*H of the 50 percent solution is from 7.0 to 7.5. If a solution of Hypaque sodium is chilled below room temperature it may become cloudy or form a precipitate which disappears upon warming to room temperature. The sterile aqueous solution is clear and nearly colorless. It has a faint bitter taste and it can be sterilized by heat in the customary manner without decomposition. It should be protected from strong light. Disodium calcium ethylenediaminetetraacetate 1:10,000 has been added as a stabilizer.

Hypaque produces excellent or good excretion urograms with clear definition of the renal pelves, ureters and bladder in more than 85 percent of the cases. Side effects—usually of a minor nature including nausea, vomiting, excessive salivation, flushing, dizziness, urticaria and muscular twitching—have occurred in from 10 to 14 percent of the cases. With slow injection (not less than three minutes) side effects appear to be reduced in frequency. Vein cramp rarely occurs and no bitter (metallic) taste is experienced by the patient.

Details regarding dosage and precautions are available through Winthrop-Stearns, supplier of Hypaque.

Ilotycin Otic

. . . for use in most infections of the external ear is supplied by Eli Lilly and Company. The product is supplied in two 5 ml. bottles, one containing 25 mg. of erythromycin (as glucoheptonate), and the other containing 50,000 units of polymyxin B (as sulfate), with benzocaine 5 percent in propylene glycol. The diluent is added to the erythromycin to make 5 ml. of solution when dispensed. The solution is stable for thirty days at room temperature. For use, three to four drops of the solution is instilled into the external auditory canal of the infected ear three or four times daily.

Lactinex Granules

. . . are being offered by Hynson, Westcott and Dunning to satisfy the pediatric demand for a more convenient dosage form of lactobacillus (Lactinex). Indicated in gastrointestinal disturbances in infants and adults, Lactinex tablets have been used to successfully treat diarrheas, including those resulting from antibiotic therapy.

Each one gram packet of Lactinex granules contain a standardized viable mixed culture of *Lactobacilli acidophilus* and *bulgaricus* with the naturally occurring metabolic enzymes that are produced by these organisms. This product is valuable in reestablishing the normal physiology of the intestinal tract in gastrointestinal disturbances in infants and adults. For administration, the contents of the packet may be added to cereal, food, or milk before feeding or serving, three or four times a day.

Meticorten

. . . (Metacortandracin) is a new, and highly potent cortisone-like steroid having powerful anti-inflammatory action and diversified hormonal and metabolic effects. A product of Schering Corporation, Meticorten is indicated in the palliative treatment of rheumatoid arthritis. However, only limited clinical studies have been conducted to date. Patients receiving the drug must be kept under close observation and the dosages recommended not exceeded. Physicians should keep in close touch with the current medical literature as additional information accumulates concerning studies on Meticorten.

All of the precautions and contraindications for cortisone app'y at this time to this drug. However, because considerably less sodium retention and potassium excretion occur with the recommended therapeutic dosages of Meticorten, the usual signs of overdosage such as

increase in weight, moonface, etc., cannot be relied upon as signs of overdosage, and for this reason additional precautions should be taken.

Meticorten *requires markedly lower dosage than cortisone.* Detailed information on indications, dosage, side effects, precautions, and contraindications is included in the company literature which should be read before using the drug.

The side effects so far reported with Meticorten in therapeutic dosages have been mild. Insomnia has occasionally occurred during the first day or two of therapy. Slight gastric distress has sometimes been noted. Slight rounding of the face has been reported in a few patients, although, paradoxically, moonface in patients previously on cortisone therapy has regressed when Meticorten was used instead. Mild hirsutism has been seen in a few patients.

Meticorten for oral administration is available in 5 mg. tablets. These are scored for convenient fractional dosage.

Mictine Tablets

. . . containing 200 mg. of aminometramide are indicated in the control of edema in patients with mild congestive heart failure; and in more severe cases for diuresis, particularly when mercurial diuretics are contraindicated. Mictine tablets are available from G. D. Searle and Company.

Mio-Pressin

. . . is a combination of three antihypertensive drugs—rauwolfia, protoveratrine, and Dibenzyline. Mio-Pressin, which is indicated in mild, moderate, and severe hypertension, offers the following advantages:

1. *Comprehensive action*— Mio-Pressin contains the three distinct antihypertensive drugs, each of which provides different pharmacological controls over blood pressure regulating mechanisms.

2. *Broad clinical usefulness*— Mio-Pressin acts on such a wide range of blood pressure regulating mechanisms that it is of value in all types and degrees of hypertension. In extended pre-introductory clinical trials covering almost 700 patients, it produced significant clinical improvement in seventy percent.

3. *Minimal side effects*— Because effective Mio-Pressin dosage contains a relatively small amount of each of its three components, side effects are generally mild and are easily controlled by careful adjustment of dosage schedules.

Mio-Pressin is a product of Smith, Kline and French Laboratories.

Noludar

. . . is a non-barbiturate hypnotic introduced by Hoffmann-LaRoche. Noludar differs from other hypnotics in that it is a piperidine derivative and not a member of the barbituric acid group.

Clinical studies in more than 3,000 patients have shown Noludar to be highly effective and well tolerated. In hypnotic dosage, it provided relief of insomnia in approximately one-half hour. Restful sleep continued for six to seven hours in most cases, and the majority of patients reported they awakened refreshed without lethargy or drug hangover.

Daytime sedation with Noludar has been found to be equally effective. Tolerance to the drug did not develop, oversedation or drowsiness was not encountered and side effects were infrequent, mild and transient. No rashes or skin eruptions were observed with Noludar in therapeutic doses.

Noludar is available in scored tablets of two strengths—200 mg. and 50 mg.; and in a palatable, cordial-flavored elixir containing 50 mg. per teaspoonful (4 ml.).

Piptal

. . . is a product of Lakeside Laboratories indicated in the relief of pain and spasm of peptic ulcer. Piptal focuses sharply on the gastroduodenal area. The effect on the bowel and bladder is negligible. Also, there is striking freedom from such side effects as urinary retention and constipation, common in peptic ulcer therapy. Piptal has been continuously administered for as long as one year without evidence of tolerance. It is also highly effective in inhibiting gastric secretion and keeping acid low. It does not interfere with normal tonus or motility. Chemically, Piptal is N-ethyl-3-piperidyl-benzilate methobromide. It is supplied as 5 mg. scored tablets. The dosage is one tablet three times a day before meals, and one or two at bedtime.

Rau-Sed—Parenteral

. . . is Squibb's reserpine injection for treatment of mental and emotional disturbances. Reserpine, given orally, parenterally, or by both routes of administration, has recently been investigated in a wide variety of psychiatric and emotional disorders. Although it is not a hypnotic drug when given in properly regulated doses, it has a pronounced tranquilizing effect which may be of value to the disturbed individual. Particularly when given as oral medication, this effect is usually not immediately observed. The response to reserpine therapy has been reported to follow a pattern of a sedative, a turbulent, and finally an integrative phase; these reactions may be seen most readily when the drug is administered parenterally.

Tri-Synar

. . . is a parasympathetic sedative and smooth muscle relaxant using the principle of triple synergism for control of spasm. A product of The Armour Laboratories, Tri-Synar is a combination of extract of belladonna, phenyltoloxamine dihydrogen citrate, and ethaverine hydrochloride. Because of the synergistic action, powerful parasympathetic sedation is possible with only a fraction of the customary dose of belladonna.

By reason of its effect on smooth muscle spasm, Tri-Synar is indicated in such conditions as spastic colitis, epigastric distress, peptic ulcer (as adjunctive therapy), spastic constipation; biliary syndrome (dyskinesia, cholecystitis); primary dysmenorrhea, and the vomiting of pregnancy, dysuria and mild ureteral spasm.

Trisocort Spraypak

. . . for intranasal use is a combination of hydrocortisone, three antibiotics—gramicidin, polymyxin, and neomycin, and two decongestants — phenylephrine hydrochloride and Paredrine hydrobromide.

During the extensive clinical trials, 58 physicians studied the effectiveness of Trisocort in 906 patients. These physicians observed that Trisocort dramatically reduces the severity and duration of intranasal and sinus infections, including the common cold.

Trisocort Spraypak, a product of Smith, Kline and French Laboratories, also offers the advantages of avoiding the danger of sensitizing the patient to—or of developing organisms resistant to—penicillin or other antibiotics which are frequently used systemically in serious infections.

CURRENT LITERATURE

edited by SISTER MARY ETHELDREDA, *St. Mary's Hospital, Brooklyn, N.Y.*

American Journal of Nursing

MARCH, 1955—"Intravenous Ethyl Alcohol Therapy," by Howard S. Cowley. A documented summary covering the uses of ethyl alcohol infusions for analgesic and sedative effects. *page 303*

American Journal of Pharmacy

JANUARY, 1955—"Let's Be Rational." An editorial pointing out how the pharmacist can rightfully solve the problem of substitution. *page 2*

American Professional Pharmacist

JANUARY, 1955—"Rules Pertaining to Orders for Medication." A list of rules on drug use and ordering that may be used as a guide in developing regulations to fit an individual situation. *page 48*

FEBRUARY, 1955—"Hospital Pharmacy and Dispensing by Nurses." An interpretation by the Michigan Attorney General on the pharmacy law affecting after-hour and week-end pharmacy service in that state. *page 150*

"The Pharmacy Aide or Technician." Presents a work distribution chart for both professional and non-professional personnel in a hospital pharmacy as developed by Mr. Walter Frazier of Springfield City Hospital, Springfield, Ohio. *page 154*

Hospital Management

JANUARY, 1955—"How to Prepare a Hospital Formulary," by William Whitcomb, Chief Pharmacist, Rochester General Hospital, Rochester, N.Y. Part One of a two part article on how to establish a pattern for the type of drugs to be used and distributed in a hospital. *page 78*

FEBRUARY, 1955—Part Two describes the tools necessary to set up the system and committee. *page 69*

Hospital Progress

JANUARY, 1955—"Developing a Hospital Formulary," by Sister Mary Vera, S.M., Chief Pharmacist, Mercy Hospital, Buffalo, N.Y. Describes the constructive approach toward establishing drug and pricing policies by maintaining an up-to-date formulary. *page 76*

FEBRUARY, 1955—"Suggestions for Making Literature File," by Sister Franciscana, O.S.F., Pharmacist, St. Joseph Hospital, Memphis, Tenn. Provides points to consider in setting up a literature file in the pharmacy on a practical basis. *page 102*

Hospitals

JANUARY, 1955—"Sustained Release—New Plan for Capsule Sedation," by Charles R. Messeloff, M.D. Describes a study on the efficiency of a single daily dose of phenobarbital given in a specifically prepared capsule form. *page 122*

Modern Hospital

JANUARY, 1955—"Career Day Offers Something for Everyone," by Whitelaw H. Hunt, Director, University Hospital, Augusta, Ga. A recruitment program for high school pupils served a dual purpose: to build good public relations and attract employees for the future. The hospital pharmacy was among the departments participating in the program. *page 65*

"Absorption, Distribution and Excretion of Drugs," by D. Abdulian; E. H. Jenney; and C. C. Pfeiffer. Explains the factors affecting absorption and distribution and the fate of drugs by detoxication mechanisms and subsequent excretion. *page 102*

FEBRUARY, 1955—"The Cardiac Depressants," by Theodore R. Sherrod. A very complete resume of drugs used therapeutically for their depressant action on the heart. *page 100*

Pharmaceutical Journal (London)

MARCH 5, 1955—"The Hospital Pharmaceutical Service—Report of the Linstead Committee." A summary of a report on hospital practice in Great Britain by a Committee headed by Sir Hugh Linstead. *page 173*

Trustee

FEBRUARY, 1955—"Evaluating the Hospital Pharmacy." The check lists for evaluating pharmacy service in accordance with the *Minimum Standard for Pharmacies in Hospitals* is presented. The lists are those prepared by the ASHP Committee on Minimum Standards and published along with the 1954 Report. *page 25*

Notes and Suggestions

PRACTICAL FORMULAS FOR USE IN HOSPITALS

LIQUID LANOLIN

Lanolin creams may be made by combining lanolin with petrolatum and mixing the resulting product with water, according to *Drug & Cosmetic Ind. 73*:233 (Aug.) 1953. Lanolin may also be put in a transparent liquid form by mixing it with isopropyl palmitate or isopropyl stearate, but this method is covered by U.S. patent 2,498,727.

A typical lanolin cream made by utilizing lanolin, petrolatum, and water may be made as follows:

Lanolin	35 percent
Petrolatum	45 percent
Spermaceti	5 percent
Water	15 percent

Melt the petrolatum, lanolin, and spermaceti together, cool to about 115 degrees F., add perfume, and incorporate the water by vigorous mixing at the same temperature. About one percent of perfume must generally be used to cover the odor of lanolin.

DISINFECTION OF ORAL THERMOMETERS

The disinfection of oral thermometers was studied by Sommermeyer and Carroll at the Nursing Research Laboratory, Public Health Service, in Atlanta, Ga. Results of these studies were published in *Nursing Research* in 1952. The final recommendations for the disinfection of oral thermometers are as follows:

1. Wipe the contaminated oral thermometer with a cotton ball moistened with a solution of equal parts of 95 percent ethyl alcohol and tincture of green soap.
2. Rinse the soap off the thermometer with cold running water.
3. Place the thermometer in a solution of 0.5 percent to 1.0 percent iodine in either 70 percent ethyl alcohol or 70 percent isopropyl alcohol for ten minutes.

ELECTRODE JELLY

Sodium Chloride	368.5 Gm.
Pumice Powder	453.7 Gm.
Tragacanth Gum	28.4 Gm.
Potassium Bitartrate	14.1 Gm.
Glycerin	85.0 Gm.
Phenol	2.9 Gm.
Water	1,000.0 ml.

The gum tragacanth and glycerin are heated in half the volume of water for six hours. The potassium bitartrate and sodium chloride are dissolved in the remaining volume of water and added. The resulting mixture is stirred thoroughly with an electric mixer and heated again for an hour. The carbolic acid and pumice are then added, together with more water if necessary, and the whole again mixed until of a creamy consistency.

In actual use a small quantity of the paste is rubbed briskly onto the desired skin area, leaving a small surplus to facilitate contact with the electrode. The patient usually notices a slight burning sensation, but none has complained of any pain or discomfort. While no instance of skin irritation from this paste has occurred in a large number of patients, the usual caution should be observed with anyone having extremely sensitive skin.

The above formula was described by Jenks and Graybiel in the *Am. Heart J. 10*:693, 1935 and recently reprinted in the *Journal of the American Medical Association.*

PLASTIC CONTAINERS

Polyethylene plastic containers are available for a wide variety of uses. A catalog containing descriptions of plastic bottles, beakers, wash bottles, dropper bottles, funnels, jugs, and numerous other items, is available from the Scientific Glass Apparatus Co., Inc. of Bloomfield, N. J. A brochure describing various sizes and shapes of plastic ointment tubes is available from the Bradley Container Corp., Maynard, Mass. Other companies which supply plastic containers include Schaar and Co., 754 W. Lexington St., Chicago 7, Ill., and the Plax Corp., W. Hartford, Conn.

STORAGE RACK FOR DRUMS

A new, lightweight, low-cost storage rack for drums has been announced by the Star Welding Company, 1054 East 134th Street, Cleveland 10, Ohio. Designed to raise drum spouts to pouring heights or for storage, the new unit is all-steel welded construction. It will easily support a fully filled 55 gallon drum. Wide legs assure stability. Easily knocked down (only a single bolt is involved), the new rack costs only $5.99 f.o.b Cleveland. Quantity discounts are also available.

PREMIER DISPERSATOR

The Premier Dispersators, which replace the former line of Premier Mixers, are designed to attain the high mixing intensity heretofore achieved by rotor-stator type mixers. However, the Dispersators achieve their mixing intensity without the necessity for a submerged bearing.

Dispersators are available in rotor diameters from slightly more than one inch to over eight inches. The one inch and three inch sizes have recently been evaluated by Allen Beck of the Indiana University Medical Center, who suggests that the smaller range of Dispersator size appears to be more suited to the wide variety of mixing and dispersing problems encountered by the hospital pharmacist.

The Duplex Dispersator illustrated is an electric laboratory unit with base stand, and one inch rotor. Further information on these mixers may be obtained from the Premier Mill Corp., Geneva, New York.

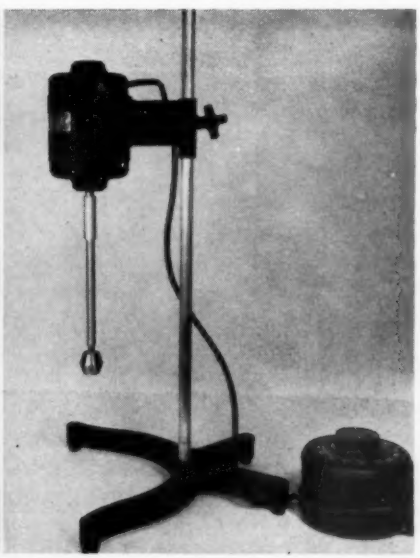
WATER DEMINERALIZER

Ordinary drinking water can be demineralized instantly to meet the specifications of the *U. S. Pharmacopeia* for "purified water", according to a recent release by the Crystal Research Laboratories. Known as the Crystalab Deeminizer Cl-5, the demineralizer can transform good drinking water into U.S.P. "purified water" at a rate as high as five gallons per hour, continuously; or there is a reservoir at the bottom, with flow control, so that an ounce or several quarts of "purified water" can be drawn off instantly when needed. Deeminizer comes equipped with direct-reading Quality-Check Meter having a dial graduated 0 to 50 in ppm as sodium chloride to control the quality of the effluent at all times. Among other features of the Deeminizer are compactness, since the complete unit requires only 6 x 8 inches of bench space, and its handy portability. No plumbing connections whatsoever are needed. The filtering tower is constructed of plastic and has a capacity of four quarts. The capacity may be doubled by inverting a gallon jug on the cushioned top.

Drinking water placed in the top passes at a constant rate by gravity through Crystalab Deeminite L-10, the filtering medium, which is an intimate mixture of cation and anion exchange resins which remove ionized minerals and salts from the water. The cation exchange resin adsorbs the metallic, or positive ions, liberating the equivalent in hydrogen ions. The anion exchange resin adsorbs the nonmetallic or negative ions and liberates the equivalent in hydroxyl ions. There is no chemical change in the water since these two ions, the hydrogen and the hydroxyl, combine to form molecules of pure water.

The Deeminizer is available from distributors or from the Crystal Research Laboratories, Inc., 29 Allyn Street, Hartford 3, Conn.

SHOWN LEFT TO RIGHT, BELOW: *Barrel Rack, Water Demineralizer, and Premier Dispersator.*



IN PHARMACY PERSPECTIVES

by GLENN SONNEDECKER
Secretary, American Institute of the History of Pharmacy

INTEREST PATTERNS OF PHARMACISTS

IN AN EARLIER COLUMN of this series[1], we talked about the fascinating but inconclusive results of the Rorschach ink-blot test applied by Dr. Goldie Kabach to pharmacists and pharmacy students. At that time I threatened to use a later allotment of space to discuss the work of two other psychologists who held up a mirror that reflects, from different points of view, the interests of people in pharmacy, their pattern and intensity.

The one method found its conceptual basis in Edward Spranger's analysis of the fundamental interests experienced by men: the theoretical, economic, aesthetic, social, political, and religious.

To measure these six interests among the 77 male pharmacy students in a junior class, the Allport-Vernon Study of Values Test was administered by Professor W. L. Van Buskirk, then associated with the faculty of the Philadelphia College of Pharmacy and Science.[2] To help reveal how these pharmacy students differed from non-pharmacy students, he selected a report of the average interests of 279 male sophomores at Dartmouth (from various fields) for comparison.

Interests of Pharmacy Students

A relative lack of aesthetic interests among pharmacy students was the most striking, and statistically reliable, difference. On the positive side, pharmacy students as a group had significantly greater interest in the theoretical and the social aspects of life and work than the non-pharmacists had. The dominant interests of the pharmacy students, however,—those probably most influential upon the personality—were the same as those of other students (i.e., not significantly different). These were the political and the economic values (political in the sense of urge toward personal power, influence, and prestige). The similarity of dominant values between the two groups, despite the significant differences, reminds us of Kabach's conclusion that differences shown by the Rorschach ink-blot tests failed to reveal definitely distinct personality types in pharmacy and accounting.

If the results of such psychologic studies are valid generally, however, they do point to certain ways that teachers and leaders in pharmacy can interpret subjects that will increase the likelihood of sympathetic response. We of course cannot know whether Van Buskirk's results accurately represent pharmacy students in other schools, much less pharmacists at large, since this study does not seem to have had a counterpart elsewhere.

The type of test here used also offers one guidepost in selecting students for pharmacy. When reporting the results of the Allport-Vernon test in 1938, Van Buskirk suggested that someone might well undertake the considerable task of standardizing Strong's Vocational Interest Blank for pharmacists. Thirteen years later it was the fulfillment of this suggestion that produced Milton Schwebel's *The Interests of Pharmacists,*[3] a study that deserves more interest among pharmacists than it seems to have commanded.

Prediction of Success

The method of this second investigation hinges on the concept that a youth most likely will find those occupations congenial where his own likes and dislikes closely agree with the composite interest-pattern of successful men in a field. The pioneer investigations of Professor Edward K. Strong, Jr., of Stanford, along this line and their application to various professions have convinced many psychologists that this approach is valid in helping to predict the likelihood of success in a chosen field.

Glenn Sonnedecker

Professor Schwebel, of New York University, has applied Strong's method and developed pharmacy rating scales for the Strong Vocational Interest Blank by determining how presumably typical pharmacists differed in their interests from men-in-general. His purpose goes beyond this, however, for Schwebel was among the psychologists who felt that such studies of other professions probably were undesirably contaminated by the likes and dislikes of *dissatisfied* members of a profession. His attention to this question not only appears to have advanced the Strong method a step, but yielded for us considerable suggestive data, without probing deeply into the origins and particularities of dissatisfaction among pharmacists. Since one pharmacist of every four professed relative dissatisfaction, and one out of ten said he was sorry he was a pharmacist, deeper and wider research on this point would be useful.

Schwebel's Findings

Schwebel's findings are based on 450 pharmacists in New York (excluding New York City) and Connecticut. Among these pharmacists he could find statistically significant differences between the satisfied and dissatisfied in only two major areas. First, a higher percentage of the dissatisfied were in retail pharmacy as compared with the percentage of the satisfied (with hospital and manufacturing pharmacy showing up more favorably). Secondly, among pharmacists devoting less than a fourth of their time to prescription work there was a higher percentage of the dissatisfied as compared with the percentage of the satisfied. On the other hand, scarcely 10 percent of all the dissatisfied wrote explicit complaints about frustrated ambition for prescription work. Other specific desires for change that came to the surface often centered about shorter hours in retail pharmacy or the possibility of shifting to a more "professional" establishment or to a position in the manufacturing or wholesale fields.

No significant differences in satisfaction could be discerned from the data on the basis of such factors as relatives in pharmacy, urban *vs.* rural, employed *vs.* owner, chain *vs.* independent, age, or years of experience. The picture looks different when only the fifty most and fifty least dissatisfied pharmacists are considered. Then, increased age and experience show up as characteristic of the well satisfied, on the average. Moreover, a relationship between extent of prescription work and satisfaction with pharmacy becomes more clear cut. And among the fifty most satisfied pharmacists, 72 percent are owners.

It is of some importance to keep in mind that the interest patterns of those dissatisfied with pharmacy were eliminated from consideration in constructing the pharmacy rating scale that has become available for scoring the Strong Vocational Interest Blank.[4] This represents a certain departure in technic from that previously used in constructing rating scales for other professions.

Schwebel's pharmacy scale apparently does discriminate significantly between the interests of pharmacists and non-pharmacists, at least when applied to groups. It has special implications for teachers, and I think for pharmacy, that the interests of pharmacists reflected therein are more closely allied to those of office and sales workers than to those of physicians, dentists, or chemists. It was also found that the interests of pharmacists spending at least 25 percent of their time in perscription work, considered as a group, were not clearly different from other pharmacists.

Application

The reader can have an entertaining moment by trying to imagine what effect mass use of the vocational interest test would have on the profession ultimately, if scored for pharmacy as a key tool in screening recruits. Would it effectively block out the challenge to the *status quo* that we expect from youth, replacing it by new blood that only flows smoothly through established channels? Would it, on the other hand, fructify pharmacy by avoiding the misfit and fulfilling youth's hope of fitting one's interests to a satisfying career? Would it be just as well to screen out the student who chooses pharmacy as an alternative to, say, medicine or chemistry; or does the pliability of young minds and the molding effect of later vocational environment make such questions less significant than they seem?

If the researches of psychologists like Kabach, Van Buskirk, and Schwebel do not answer all questions, they do give us additional insight into the personality of pharmacists. Certainly the interests, aims, and motivations of the people entering pharmacy are fundamental to the character of the profession, and we hope that remaining perplexities will spawn further investigation.

REFERENCES

1. *Bull. Am. Soc. Hosp. Pharm., 11*: 278-9, 1954
2. Van Buskirk, W. L.: Some Educationally Significant Features of the Pharmaceutical Personality, *Amer. J. Pharm. Education, 2*: 330-339, 1938.
3. Schwebel, Milton: *The Interests of Pharmacists.* King's Crown Press, Columbia University, New York, 1951. 84 pp.
4. Scoring keys for the new Vocational Interest Scale for Pharmacists are supplied through Stanford University Press.

ASHP affiliates

Northeastern New York Society

Approximately fifty hospital pharmacists attended the January 21 meeting of the Northeastern New York Society held at Albany Hospital. Dr. Thomas Hale, Jr., Administrator of Albany Hospital, spoke on "Some Problems With Which Hospitals Are Confronted Today." Other speakers included Dr. Ferdinand Haase, Jr., Medical Director of Albany Hospital and Miss Frances A. Barvian, Director of Nursing Service. A film on "Hyaluronidase," was shown by representatives of Wyeth Laboratories.

Members of the Northeastern New York Society were guests of the Wyeth Laboratories at an international closed-circuit medical television symposium on Thursday evening, February 24. The program originated in New York City under the sponsorship of the American Academy of General Practice. The topic of the Symposium was "Management of Streptococcal Infection and Its Complications."

Northern California Society

Members of the Northern California Society of Hospital Pharmacists met at the East Oakland Hospital in Oakland on February 8. With President Alphonse A. Seubert presiding, the following committee chairmen were appointed, *Program,* Clara Henry; *Constitution and By-Laws,* Patrick Crichton; *Legislative,* Matilde Herby; *Bulletin,* Charles Bertrand; *Membership,* Jessie Lavender; and *Personnel,* Edward Chilgren.

Following the business meeting, Mr. Patrick Crichton spoke on "Sterile Enough," and Mr. W. E. Cahill of the Wyeth Laboratories presented a film on "Digitalis."

Southern California Society

A film on "Ansolysen" by Wyeth was shown at the February 9 meeting of the Southern California Society held at Queen of Angels Hospital in Los Angeles.

Resignations from the Society were accepted from Mrs. Norma Irish, a former president of the Southern California Society, and from Miss Mabel Poole who is retiring after thirty-two years of service as Chief Pharmacist at Huntington Memorial Hospital in Pasadena. Each was presented with a token of appreciation for outstanding service to hospital pharmacy.

Discussions during the business session which was presided over by President Joseph Ball covered internship programs in hospital pharmacy, a proposed seminar for the Los Angeles area, preparation of a history of the local chapter, and representation at the national convention.

Philadelphia Hospital Pharmacists

The Philadelphia Hospital Pharmacists' Association met at the Benjamin Franklin Hotel in Philadelphia on February 15. The meeting was preceded by a buffet supper sponsored by Pfizer Laboratories.

The program included discussions on providing training for hospital pharmacists with emphasis on the hospital's need for people having special training in this field. Mr. Norman Bullard of the Pfizer Laboratories spoke on "The Pharmaceutical Industry's Contribution to Hospital Pharmacy Educational Programs."

During the business session, action was taken on the proposed revisions of the Constitution and By-Laws. In accordance with action taken at this meeting, a provision was made for Associate Membership in the local group which does not require membership in the national organizations.

Oklahoma Society

The January meeting of the Oklahoma Society of Hospital Pharmacists was held in the Assembly of St. Anthony Hospital in Oklahoma City. Guest speakers included Mr. John W. Seibert, Divisional Manager of McKesson-Robbins, Inc., Oklahoma City, and Mr. E. R. Weaver, Secretary of the Oklahoma State Pharmaceutical Association.

Arizona Society

Discussions at the November 21 meeting of the Arizona Society of Hospital Pharmacists covered the dispensing of medications by nurses and interns, pharmacies operating below set legal prescription department standards as listed in the regulations of the Arizona Pharmacy Act, and the use of the Steri-Rx-Chamber for preparing small volume parenteral solutions.

The meeting was held at St. Joseph Hospital in Phoenix.

Washington State Hospital Pharmacists

The name of the Hospital Pharmacists of the Puget Sound Area has been officially changed to "Washington State Hospital Pharmacists."

A talk on periodontal diseases along with illustrations on slides was presented by P. W. Frankenstein, D.D.S. at the January meeting of the Washington State Hospital Pharmacists. Included also on the program was a review of hospital prescription pricing by Mr. Wesley Gladhart, Pharmacist at the U. S. Public Health Service Hospital in Seattle.

During the business session, Mr. Dave Irvine, Chairman of the Publicity Committee, presented a display which could be set up in each hospital. The theme of the exhibit brought out the value of drugs to the patient. Discussions also covered representation at the ASHP Annual Meeting, participation in the institutes, the possibility of a hospital pharmacist serving on the State Board of Pharmacy, and changes in the Constitution and By-Laws.

Western Pennsylvania Society

Guest speakers at recent meetings of the Western Pennsylvania Society of Hospital Pharmacists have included three past presidents of the national organization—Mr. Herbert L. Flack, Mr. Grover C. Bowles and Mr. Allen V. R. Beck.

New officers of the Western Pennsylvania Society include *President,* Joseph Oddis who is serving a second term in this capacity; *Vice-President,* Sister M. Francine; *Treasurer,* Dorothy Kelly; and *Secretary,* Ann Keane.

Massachusetts Society

At the January meeting of the Massachusetts Society of Hospital Pharmacists, the role of the pharmacist in the hospital was discussed by a panel including Mr. Robert Lowrey, Director of the New England Deaconess Hospital, Boston; Dean H. C. Newton of the Massachusetts College of Pharmacy; and Mr. Norman Bullard of Pfizer Laboratories, Division of Chas. Pfizer and Company. The pharmacist's value in shaping hospital economy, the importance of the hospital pharmacist as a bridge between the pharmaceutical industry and hospitals, and the pharmacist's role as a teacher among hospital personnel, highlighted the discussions.

The meeting was held at the Sheraton Plaza Hotel in Boston.

North Carolina Society

"Prevention of Accidental Poisoning in Children" with the intention of establishing an emergency antidote system in the individual hospitals is the current project of the North Carolina Society. The Committee appointed for the poisoning-antidote study is headed by Mr. James Mitchener, Cabarrus Memorial Hospital, Concord, N. C.

The North Carolina Society held its regular quarterly meeting at the Rowan Memorial (County) Hospital at 7:30 P.M. on January 29. Pharmacists from throughout the state were present. Following the business meeting, Mr. Claude Paoloni, Chairman of the Program Committee, led a panel discussion. Representatives of pharmacy departments in the different types of hospitals presented their individual methods of operation, explaining how the service was effected. Mimeographed copywork of the talks, and sample forms were used by each speaker as visual aids in following the different types of service. A short discussion time engaged group attention to instances of the pharmacy role played in handling research drugs, in stocking "accessory" items such as supplementary feeding products, and estimates of pharmacy inventories.

The July meeting of the North Carolina Society will be held at the Cone Memorial Hospital in Greensboro where Mr. Claude Paoloni is chief pharmacist.

Western New York Chapter

"Microfilming Prescriptions" was the subject of a talk by Mr. Mearl D. Pritchard at the February 8 meeting of the Western New York Chapter of the ASHP. Mr. Pritchard, a retail pharmacist in Buffalo, pointed out the advantages of microfilming prescriptions and explained actual use of the system. His talk was illustrated with slides.

The meeting was held at Mercy Hospital in Buffalo with Sister Mary Vera, Chief Pharmacist, serving as hostess.

Midwest Sisters' Association

Dean E. R. Serles of the University of Illinois College of Pharmacy was the principal speaker at the February 17 meeting of the Midwest Association of Sister Pharmacists. The meeting was held at the College of Pharmacy with an opportunity to tour the new buildings. The subject of Dean Serles talk was "The New Five Year Pharmacy Course."

Southeastern Florida Society

At a joint meeting of the Miami Branch of the A.Ph.A. and the Southeastern Florida Society of Hospital Pharmacists on February 15, the following program was presented:

7:45 - "In These Hands," a film available from Eli Lilly and Co.
8:15 - The Lilly Digest, A Service to Pharmacists by Mr. Ray McCaughan.
8:30 - Reserpine, New Uses by Mr. John Ross.
8:40 - A preview on the Salk Polio Vaccine by Mr. Bob Hunley.
8:50 - Evaluations on Erythromycin by Mr. John Ross.
9:00 - A.Ph.A. and ASHP 1955 Convention by Mrs. Anna D. Thiel.
9:05 - Letters from Headquarters by Mr. Jack Davis.
9:15 - Social Services at Jackson Memorial Hospital, Miami, by Mrs. Lucille R. Gray, Assistant Director.
9:25 - A Travel to the Holy Land with Mrs. Lucille R. Gray.

Association of the Midwest

The Association of Hospital Pharmacists of the Midwest sponsored a Winter Seminar at the Creighton University College of Pharmacy, Omaha, on February 19. The program included the following speakers:

Nutrition in Pharmacy, Victor E. Levine, Ph.D., Professor of Biological Chemistry, Creighton University, School of Medicine.
Ten Years of Antibiosis, James M. Severens, Ph.D., Professor of Bacteriology, Creighton University, School of Medicine.
Techniques of Public Speaking, Robert Reilly, Director of Public Relations, Creighton University.
Current Hormone Therapy, Mrs. Edmund Czerwinski, Assistant Professor, Biological Sciences, Creighton University College of Pharmacy.

Minnesota Society of Hospital Pharmacists

The Minnesota Society of Hospital Pharmacists has applied for affiliation with the national organization. Officers of the group are *President,* Louise Hunkins, Minneapolis General Hospital; *Vice-President,* Ruth Lofgren, Northwestern Hospital, Minneapolis; and *Secretary-Treasurer,* Hallie Bruce, University Hospitals, Minneapolis.

Greater St. Louis Association

The guest speaker for the November 14 meeting of the Hospital Pharmacists' Association of Greater St. Louis was Mr. Ken Schaefer, Personnel Officer for the St. Louis office of the Veterans Administration. The meeting was held at St. Mary's Hospital at 2 P.M. with Sister Mary Berenice as hostess.

Maryland Association

The January 12 meeting of the Maryland Association of Hospital Pharmacists was held at The Johns Hopkins Hospital in Baltimore. Included on the program was a paper on "Hypertension" by Mr. Joseph

Mattriani, and a discussion of "Pharmaceutical Container Closures" by Mr. Martin Nemerow.

Mississippi Society

A business meeting of the Mississippi Society of Hospital Pharmacists was held at the St. Dominic Hospital in Jackson on January 12. Committee appointments were made by President Brookshier with the following serving as chairmen: *Program,* Lee Cameron; *Membership,* E. L. Hammond; *Legislative,* W. M. Adams; *Public Relations,* V. Hughes; and *Nominating,* H. C. Blackledge.

Greater New York Chapter

On Tuesday afternoon, January 18, the members of the Greater New York Chapter of the ASHP were the guests of Mr. Robert Bogash and the Pharmacy Staff at Lenox Hill Hospital in New York City. The program was in the form of a tour of the Pharmacy. Of particular interest was the prepackaging equipment and a liquid filling unit.

The February 15 meeting of the Greater New York Chapter was held at St. Clare's Hospital in New York City. The program consisted of a panel discussion on the Federal, state and local regulations for alcohol, narcotics and barbiturates.

Akron Area Society

"Handling Narcotics in the Hospital" was the subject of a panel discussion at the January 11 meeting of the Akron Area Society. Mrs. Mary Morgan served as moderator and the panel covered narcotic forms and inventory, narcotic prescriptions written by interns and residents, the nurses' responsibility, exempt narcotics, accidental destruction of narcotics, and unusable narcotics.

Association of the Midwest

The January 8 meeting of the Association of Hospital Pharmacists of the Midwest was held at the Nebraska University Hospital in Omaha with Mr. W. J. Durant, Chief Pharmacist as host. Dr. A. R. McIntyre presented an informative lecture on "History and Clinical Uses of Curare." Dr. McIntyre is chairman of the Department of Physiology and Pharmacology at the Nebraska University College of Medicine and is the author of "Curare, Its History, Nature, and Clinical Uses." He stressed the fact that physostigmine has been proven a satisfactory antidote for Curare, but as yet, no specific antidotes have been proven for the synthetic curare-like substances that are now available.

New Jersey Society

Mrs. Anna C. Richards, Chief Pharmacist at Mountainside Hospital in Montclair, N. J., was installed as president of the New Jersey Society at the January 12 meeting in Newark. Other officers are *Vice President,* Eugene Von Stonley; *Treasurer,* Henry J. Roche; and *Secretary,* Sister Marian. The principal speaker was Mr. E. Burns Geiger, Director of Trade Relations for Pfizer Laboratories. Included also on the program was a report on the Pan-American Congress of Pharmacy and Biochemistry which was held in Sao Paulo, Brazil in December. Mrs. Anna Richards who served as one of the U. S. delegates presented the report.

The February 17 meeting of the New Jersey Society was held at St. Michael's Hospital in Newark. Papers presented included one by Sister Marian entitled "Some of My Best Friends Are Nurses;" and one by Miss Marjorie O'Boyle entitled "The Practice of Pharmacy in a Rural Medical Center."

Oregon Society

Members of the Society of Hospital Pharmacists of the State of Oregon met at the Good Samaritan Hospital in Portland on February 9. The program included a film on the recovery room made available by E. R. Squibb and a talk by the Chief Nurse of the Recovery Room at Good Samaritan Hospital.

Southeastern Society

Mr. Terry B. Nichols, Chief, Pharmacy Service, Veterans Administration Hospital in Birmingham, Alabama, was installed as President of the Southeastern Society at the Annual Meeting held in Atlanta, April 20-22. Other officers include *Vice President,* Charles Barnett, Chief Pharmacist at St. Luke's Hospital in Jacksonville, Fla., and *Secretary-Treasurer* W. W. Taylor, Chief Pharmacist, North Carolina Memorial Hospital in Chapel Hill, N. C.

A complete report of the Atlanta meeting will appear in a forthcoming issue of THE BULLETIN.

Texas Society

The Texas Society of Hospital Pharmacists held its annual meeting in Austin on February 19 and 20 in conjunction with the annual Seminar. Those attending included President George F. Archambault and President-Elect Claude Busick.

Tennessee Society

The Annual Meeting of the Tennessee Society of Hospital Pharmacists will be held at the Lookout Mountain Hotel in Chattanooga on May 20 and 21. The program is in charge of Mr. Joe R. Sykes, Chief Pharmacist at the John Gaston Hospital, Memphis.

Ohio Society

The Annual Spring Meeting of the Ohio Society of Hospital Pharmacists was held at the Netherland Plaza Hotel in Cincinnati on March 8 and 9. Mr. William McElroy, Chief Pharmacist at Peoples Hospital in Akron presided over the business sessions and Mrs. Evlyn Gray Scott from St. Luke's Hospital in Cleveland was in charge of the program.

A highlight of the program was a panel discussion on "Providing Pharmacy Service in the Very Small Hospital," with Mr. Thomas Foster of the U.S. Public Health Service as moderator. Other participants on the panel included Mr. Frank E. Kunkel, Pharmacist of the Kunkel Apothecary, Cincinnati and Mr. David Ott, Pharmacist of the Shaw and Ott Drugs, Inc., Mansfield.

Another phase of the program covered "A Plan for a Hospital Pharmacy Manual," by Mr. Frank Hayba, Purchasing Agent for the Cleveland Hospital Council; and "Method—Why Not Pharmacy?" by Mr. Robert D. Wayland, Industrial Engineer at St. Luke's Hospital in Cleveland.

Actions taken during the business session included endorsement of the ASHP efforts toward establishing a national hospital formulary service; and approval of the work of the Society's Committee to Study the Role of the Pharmacists in Small Hospitals. Members also approved the Ohio Society joining the American Institute of History of Pharmacy.

New officers installed at the March meeting include *President,* Henry F. Szymczyk, Cleveland Clinic, Cleveland; *President-Elect,* Robert A. Crocetti, Children's Hospital, Columbus, Ohio; *Vice-President,* Bart F. Blosser, St. Rita's Hospital, Lima, Ohio; *Secretary,* Sister Margaret Mary, H. H. M., St. Joseph's Riverside Hospital, Warren; and *Treasurer,* Sister Jeanne Marie, H.H.M., St. Elizabeth's Hospital, Youngstown.

as the president sees it

GEORGE F. ARCHAMBAULT
U. S. Public Health Service, Washington, D. C.

Date Line—MARCH 10, 1955—WASHINGTON, D. C.—This "short" Society year (August 1954 to May 1955) now draws to a close. It seems but yesterday that I was being asked by our good Secretary to prepare my first message for THE BULLETIN. Tonight I sit at my desk and pen my final message as your President.

Local Chapters—Our SOCIETY now has 38 active local chapters with a possibility of growing to 41 shortly. However, some States have more than one Chapter and the Regional Chapters overlap States, leaving us without a State Chapter in over 20 States. It is my hope that the SOCIETY will have one or more affiliated chapters in each of the 48 States within the next few years. May I suggest to those of you living in States without Chapters, that you work with our new President Claude Busick and our Secretary, Miss Niemeyer, concerning the establishment of an organization in your State. They will be most happy to assist in every way possible. Let's try to make it a chapter in each of the 48 States by '57.

Convention Papers and Institute Subjects—Several members, during the year, have asked the question, "How does one go about presenting a paper at the Annual Meeting or at an Institute."

It might be well to point out here that every member has the *right to present his paper at a Convention* of his SOCIETY providing he abides by the rules and his paper is of a proper subject. Because of time limitations at conventions, papers may be listed by title and author only, or a time limitation placed on each presentation. This sometimes allows for but a summary presentation of the paper. However, if the paper is published, it is usually published in full.

Institute programs, being teaching programs are built around a theme—Topics presented by faculty members of Institutes are chosen by a committee responsible for evaluating the needs. The faculty is selected by the committee and participants are invited to present papers on particular subjects.

You now have the rules—Your SOCIETY welcomes member papers for its Annual Meeting—If you have material of interest to others in our speciality, start planning now to write a paper for the Detroit Convention in 1956.

PRESIDENT'S LOG

Philadelphia College of Pharmacy, Philadelphia Branch of the American Pharmaceutical Association and Philadelphia Hospital Pharmacists Association: January 13—To Philadelphia on the "Pennsy" to discuss "Careers in Hospital Pharmacy" with the students at the Philadelphia College of Pharmacy. In the evening at the Philadelphia College of Pharmacy, the oldest college of pharmacy in the U. S., speaking at the joint dinner meeting of the Philadelphia Branch of the American Pharmaceutical Association and the Philadelphia Hospital Pharmacists Association. The subject, "Hospital Pharmacy Today and Tomorrow." Hospital Pharmacists Ketcham, Manzelli, and Miss Desjardins, all officers of the local hospital pharmacists' group, did themselves proud in arranging a fine program with the local A.Ph.A. officers.

Public Relations Committee, American Pharmaceutical Association: January 14—Washington, D. C.—Today to the American Pharmaceutical Association Institute of Pharmacy Building to serve on the Public Relations Committee with Warren Lansdowne (Eli Lilly), Walter Chase (Parke, Davis), John Lynch (Temple University), and Charles Rabe of the A.Ph.A. Public Relations Committee. This is the Committee that judges the Pharmacy and Hospital Week displays and exhibits Why not enter an exhibit for National Hospital Week, May 8-14, 1955. You may receive the beautiful plaque awarded the best exhibit. (For details See page 82 of the January-February issue of THE BULLETIN.) The hospital and clinic awards this year went to the Springfield City Hospital (Ohio) Walter Frazier, plaque; St. Vincent's Hospital (Toledo, Ohio) Anna Bruggeman, Certificate of Merit; and the Massillon City Hospital (Ohio) William Slabodick, Certificate of Merit. Seems like Ohio hospital pharmacists know how to win.

Duquesne University, School of Pharmacy, Western Pennsylvania Society of Hospital Pharmacists: January 20——At Pittsburgh, Pennsylvania, speaking to the student body at Duquesne University School of Pharmacy. Subject, "Hospital Pharmacy as a Career." Dean Hugh Muldoon, President Joseph Oddis of the Western Pennsylvania Society of Hospital Pharmacists, Sister Mary Gonzales of Mercy Hospital and your President spent the afternoon and early evening, until train time, discussing hospital pharmacy and Society activities in Western Pennsylvania. Sister Gonzales' pharmacy is one that you would enjoy visiting. Try to see it when next you are in Pittsburgh.

George Washington University School of Pharmacy, February 9—At noon, to George Washington University School of Pharmacy, Washington, D. C., where Dean Charles Bliven introduced your President to the senior students. Another excellent opportunity to discuss "Hospital Pharmacy as a Career" to the young of pharmacy.

Washington State Hospital Pharmacists and Puget Sound Branch of the American Pharmaceutical Association, University of Washington School of Pharmacy, February 16—

Allen V. R. Beck, was unable to be present due

8 A.M. Now in Seattle, Washington, after being airborne ten hours yesterday flying from Washington, D. C. Here to speak in "Bagley 131" to the student body on "Careers in Hospital Pharmacy." A delightful day visiting the school and the new Medical Center. Highlights of the day, a faculty luncheon presided over by Dean Forrest Goodrich in honor of the President of your SOCIETY and delightful conferences with Dr. Elmer Plein and Dr. James M. Dille of the University Faculty. Our subject, the teaching of hospital pharmacy and pharmacology to pharmacy students hospital bound. In the evening, off to Edna Hufford's Children's Orthopedic Hospital, for a joint meeting of the local branch of the A.Ph.A. and the Washington State Hospital Pharmacists, a meeting chaired jointly by George Gruber and Mr. Hendrickson. Your President spoke on "The Future of Hospital Pharmacy."

While in Seattle, I had the opportunity to visit the new pharmacy of the Public Health Service Hospital manned by the capable team of Proper, Gruber, Gladhart and Intern McKay. Also a visit to the King County Hospital to see Theodore Taniguchi's new pharmacy and solution room. Hospital Pharmacists Joe Birmingham, Bertha Chinn, Mrs. Cyrilla Jensen, and George Gruber, present and immediate past officers have hospital pharmacy activities well in hand in Seattle. It was a real pleasure to meet with pharmacists from Tacoma and other distant cities at this meeting.

Medical Center, Houston, Texas, February 18—Now in Houston, Texas, after being airborne from 7:30 A.M. to 11 P.M. yesterday flying down and across the country from Seattle. Weather delightful. I was met at the plane in Houston by Dr. George Webber of the University of Houston School of Pharmacy. Spent the morning visiting the five hospital pharmacies of the Medical Center—Hermann Hospital; M.D. Anderson Clinic; the Methodist Hospital; and St. Luke's and Texas Children's Hospital manned by the capable teams of Frank Bowers, James McKinley, A. W. Pfluger, and Paul Wilburn and staffs. Hospital Pharmacist Tom Rouse of Hermann and Mr. Pfluger were my guides. Like most hospital pharmacists, I enjoy these tours, pick up something new every time. In the afternoon, off to Austin with Hospital Pharmacist John Freels to attend the meeting of the Texas Society of Hospital Pharmacists scheduled for 8 P.M.—a meeting presided over by gracious Adela Schneider.

Seventh Annual Hospital Pharmacy Seminar, School of Pharmacy University of Texas and Texas Society of Hospital Pharmacists, February 19 and 20—A busy two days spent attending this grand Institute. Dean Henry Burlage, Joe Arnette, Director of Pharmacy Extension; and Miss Louise Pope with the officials of the Texas Society of Hospital Pharmacists staged a seminar program par excellence. Your President addressed the group on matters of hospital pharmacy of national interest. I was scheduled to speak early on the program, so "just listened" for the rest of the two days. Sister Teresa had a fine paper on Central Sterile Supply. Joe Vance as usual did himself poud. Bob Bogash ably represented Don Francke in presenting the story on the proposed formulary service. Cedric Jeffers, Dr. McMahon, Don Kroeger, Paul Hudson, James McKinley, Jr., Charles Henry, and others, all "local talent," gave splendid discussions on assigned subjects.

Sunday morning your President not only had the honor of installing President Charles Henry (the right arm of the Dean of Hospital Pharmacists at Baylor, W. Smith) and his official family into office but also received through a presentation made by Hospital Pharmacist Cedric Jeffers a document from Governor Allan Shivers of Texas proclaiming your President an honorary Texan. While in Austin, Dean Henry Burlage arranged for your President to speak to the students at the University.

Houston Area Society of Hospital Pharmacists, University of Houston, School of Pharmacy, February 21—Now back in Houston and early in the morning to Paul Hudson's V.A. hospital pharmacy, then on to Dean Ferguson's School of Pharmacy at the University of Houston where we again spoke to pharmacy's young on "Careers in Hospital Pharmacy." Luncheon with the Dean, faculty, and hospital pharmacists and then a visit to the Public Health Service Clinic in Houston (Pharmacist-Administrator Profit) and the Public Health Service Hospital in Galveston where Pharmacist W. Hamma serves so capably as Chief of the Pharmaceutical Service. Back to Houston by early evening for a speaking engagement at the Ben Milan Hotel, the dinner meeting of the Houston Area Society of Hospital Pharmacists. Hospital Pharmacist A. Pfluger presided. My last evening in Texas spent with this grand group of hospital pharmacists, pharmaceutical educators, and friends.

Executive Committee Meeting of the A.S.H.P., February 25 and 26—Back in Washington, D.C. Now devoting two full days to the serious business of running your SOCIETY. All officers of the SOCIETY and chairmen of the standing committees were in attendance. Subjects such as the study on hospital pharmacy services, procedural manuals, scholarships, the formulary service, student memberships, internships, and recommendations and reports from the several committees of the SOCIETY received the attention and study of your deliberating body.

Policy Committee of the Division of Hospital Pharmacy of the A.Ph.A. and ASHP, February 27—Sister Stephanina of the Catholic Hospital Association, Dr. Robert Cadmus of the American Hospital Association, Dr. R. P. Fischelis and Dr. G. Jenkins of the American Pharmaceutical Association and your appointed representatives Bowles, Francke, (Beck in absentia due to illness), Claude Busick, and yours truly, spent the full day discussing the proposed study of hospital pharmacy services, scholarships and fellowships, internship accreditation, and institutes.

University of Maryland, School of Pharmacy, March 8—Today to Baltimore to Dean Foss' excellent school to speak to the students on "Careers in Hospital Pharmacy."

Incorporation, *March* 9—Incorporation of your SOCIETY as a non-profit organization in the District of Columbia is an accomplished fact. Details later.

March 17, Western Pennsylvania Society of Hospital Pharmacists anl Pittsburgh University School of Pharmacy—To complete this travelogue of your 1954-1955 President so that you may know of his Society activities, he will on March 17, address the students of the University of Pittsburgh School of Pharmacy, Dean Reif's school. That afternoon he will meet with the Western Pennsylvania Society of Hospital Pharmacists. His subject—"Functions and Responsibilities of the Individual Pharmacy Committee Member." Hospital Pharmacist Joseph Oddis, President of the local Society will be presiding.

March 24, New Jersey Society of Hospital Pharmacists—On March 24, your President will speak at the dinner meeting of the New Jersey Society of Hospital Pharmacists. Anna Richards, President will be presiding. The Place—The Mountainside Hospital in Montclair.

CONTINUED ON PAGE 180

NEWS

C.H.A. Annual Convention

"The Road Ahead," will be the theme for the Annual Convention of the Catholic Hospital Association scheduled for May 16 to 19 in St. Louis, Mo. During the general sessions, "Medical Care in the Future," and "Planning to Meet Changes," will be the topics for discussion with outstanding specialists in the field participating. An all-day general Symposium on the Health of Religious is scheduled on Thursday, at which the Reverend Mother Anna Dengel, M.D., Mother General of the Medical Mission Sisters, Philadelphia, will preside and will outline the importance of the health of religious.

In addition to the general meetings, there will be special sectional meetings on public relations, personnel, maintenance, obstetrical nursing, dietary service, nursing service, auxiliaries, hospital administration, and medical social work. Hospital pharmacists will convene on Saturday for the annual Institute.

Exhibits, which promise to show the newest developments in drugs and equipment, will be open from 11 A.M. to 3 P.M. daily. Arrangements are being made for daily tours of the Central Office of the Catholic Hospital Association at 1438 South Grand Boulevard. The Saint Louis Convention will mark the first opportunity for many of the hospital administrators and others to visit the expanded facilities of the C.H.A. since the new building was completed in 1954.

Policy Committee Meets

President George F. Archambault, Grover C. Bowles, and Don E. Francke represented the AMERICAN SOCIETY OF HOSPITAL PHARMACISTS at the Policy Committee meeting of the Division of Hospital Pharmacy held in Washington on February 27. Another representative of the SOCIETY, Allen V. R. Beck, was unable to be present due to illness. Other members of the Committee present included Robert P. Fischelis and Glenn L. Jenkins representing the American Pharmaceutical Association; Robert Cadmus representing the American Hospital Association; and Sister Mary Stephanina, representing the Catholic Hospital Association.

The principal subjects covered at the meeting included a Proposed Study Project of Hospital Pharmacy Services, approval of internship programs, scholarships and fellowships in hospital pharmacy, and plans for annual institutes. Particular attention was given to inaugurating a program for evaluation of the hospital pharmacy internships. An application form and a tentative procedure were worked out and it is anticipated that initial contacts with institutions offering internships will be made prior to the Annual Meeting in May. Details of the program will be reported at the Miami Convention.

Executive Committee Meets

The Executive Committee of the AMERICAN SOCIETY OF HOSPITAL PHARMACISTS met at the Washington Hotel in Washington, D. C. on February 25 and 26. Those present included: George F. Archambault, Claude Busick, Gloria Niemeyer, Sister Berenice, John Scigliano, Paul Parker, Anna Thiel Shannon, and Charles Towne. Mr. Allen V. R. Beck, Immediate Past President, was unable to be present due to illness. Dr. Robert P. Fischelis, Secretary of the A.Ph.A. and Chairman of the Division's Policy Committee, and Dr. Don E. Francke, Director of the Division and Editor of THE BULLETIN, were present for some of the sessions. Others attending special sessions included Mrs. Virginia Dean of the Division Staff; Mr. Thomas Foster, Chairman of the SOCIETY's Committee to Study the Role of Pharmacists in the Small Hospitals; Mr. Milton Skolaut, Chairman of the Committee on Pharmacy Operated Central Sterile Supply and Vice-President-Elect of the SOCIETY; Mr. Grover C. Bowles, a Past President of the ASHP; and Mr. Vernon Trygstad, Chief of the Pharmacy Service of the Veterans Administration. Col. Bernard Aabel, Personnel Division, Office of the Surgeon General of The Department of The Army, was also present for a luncheon meeting.

In addition to the routine reports, the Executie Committee gave consideration to inauguration of a public relations program, the first step to be directed toward interesting students in a career in hospital pharmacy; accreditation of hospital pharmacy internships; publication of the Syllabus for Teaching Hospital Pharmacy Administration;

work of the affiliated chapters; and the functions of the Committee on Pharmacists in Government Service. The Committee approved the SOCIETY carrying out the National Hospital Formulary Service and further recommendations will be made at a later date.

Plans for the Annual Meeting were outlined including the program and arrangements being made by the local committee for entertainment. Further details regarding SOCIETY activities will be reported at the Annual Meeting which is being held in Miami in May.

ASHP Represented at Meeting with FDA Officials

The AMERICAN SOCIETY OF HOSPITAL PHARMACISTS was represented by Mr. Grover C. Bowles, a past president; Secretary Gloria Niemeyer, and President-Elect Claude Busick at a meeting of representatives of the A.Ph.A. and affiliated organizations with officials of the Food and Drug Administration. The meeting was held pursuant to resolutions passed by the A.Ph.A. and the American College of Apothecaries at the Boston Convention. The group met with F.D.A. Commissioner George Larrick and members of his staff on February 23 to discuss current regulatory and law enforcement policies involved in the administration of the Food, Drug and Cosmetic Act, as they affect pharmacists.

The broad general topics covered in the discussion included the relation of state and local enforcement procedures to those of the F.D.A. in connection with drug law enforcement; problems involving transfer of prescription legend drugs to "over-the-counter" status; distribution of prescription legend drugs by large industrial concerns to their employees without prescriptions; prompt circulation of interpretations, rulings and decisions affecting the practice of pharmacy to practitioners, and the cooperation of practicing pharmacists with health authorities, the F.D.A. and other agencies in educational work, seeking to reduce the hazards from accidental ingestion of common drugs such as the salicylates, especially candied aspirin by children.

In addition to those representing the ASHP, the following members of the American Pharmaceutical Association and affiliated groups were in attendance: Dr. Noel E. Foss, Dean of the College of Pharmacy, University of Maryland, representing the American Association of Colleges of Pharmacy; Dr. L. M. Kantner, Secretary of the Maryland Board of Pharmacy and Drug Commissioner for the State of Maryland, representing the National Association of Boards of Pharmacy; Mr. Louis J. Fischl, Mr. Louis Longaker, Mr. F. Royce Franzoni, and Mr. Robert Abrams, representing the American College of Apothecaries; Mr. John E. Donaldson, representing the National Association of Chain Drug Stores; and Dr. Robert P. Fischelis, Secretary of the Amercian Pharmaceutical Association.

Paul Rees

Charles Harrell

Rees and Harrell Promoted

Mr. Paul T. Rees has been promoted to the position of Director of Trade Relations for Bristol Laboratories. He has been with the Company since 1946 in the capacity of Sales Manager. Mr. Rees is a member of the A.Ph.A. and the ASHP and has participated in a number of the meetings of sectional and local affiliates.

Mr. Rees' duties as Sales Manager will be taken over by Mr. Charles T. Harrell who was formerly the Assistant in this position. Mr. Harrell was formerly from Atlanta, Georgia and is well known to the members of the Southeastern Society of Hospital Pharmacists.

The headquarters for both Mr. Rees and Mr. Harrell are located at 630 Fifth Ave., New York.

Back Issues of The Bulletin Needed

The following back issues of THE BULLETIN are urgently needed in order to complete a set for the Copyright Office of The Library of Congress:

Volume 3, Number 2	(Mar.-Apr.)	1946
Volume 5, Number 2	(Mar.-Apr.)	1948
Volume 5, Number 5	(Sept.-Oct.)	1948
Volume 6, Number 1	(Jan.-Feb.)	1949

One dollar will be paid for any of the issues included in the above list. Please send to: THE BULLETIN OF THE ASHP, 2215 Constitution Ave., N. W., Washington 7, D. C.

Rutgers Offers Course in Hospital Pharmacy

Rutgers University College of Pharmacy has instituted a credit course in hospital pharmacy. Thirteen seniors who wish to become acquainted with hospital pharmacy facilities, administration and relations with other hospital departments have enrolled in the two-hour hospital pharmacy orientation being given during the current semester.

This first hospital pharmacy credit course taught at the New Jersey State University was developed from a report by Dr. Blake F. Putney of the Rutgers faculty coming out of a 1952-53 workshop made possible by a $1,000 grant from the New Jersey Society of Hospital Pharmacists.

Miss Geraldine Stockert, Chief Pharmacist at Monmouth Memorial Hospital in Long Branch, N. J. is the course lecturer. A graduate of Creighton University College of Pharmacy where she received a B.S. degree in pharmacy in 1936, Miss Stockert was a hospital pharmacist in Omaha, Nebraska hospitals prior to joining the Monmouth Memorial staff in 1944. She has also served an internship in hospital pharmacy at St. Luke's Hospital in Cleveland.

Middleton Heads VA Medical Program

Dr. William S. Middleton, former dean of the University of Wisconsin Medical School, has been appointed chief medical director of the Veterans Administration. He replaces Vice Admiral Joel T. Boone who retired on March 1.

The VA operates 172 hospitals, which care for nearly 500,000 veteran patients each year.

Herbert Wright Retires

Mr. Herbert Wright recently retired as Chief Pharmacist at the Crouse-Irving Hospital in Syracuse, N.Y. Mr. Wright is a member of both the A.Ph.A. and the ASHP and has taken an active part in Society activities. He had been employed at the Crouse-Irving Hospital for thirteen years.

Mr. Wright has also been active in retail pharmacy having owned three stores in Syracuse. He has served as president of the New York State and Onondago County Pharmaceutical Association.

Blue Book Available

The new 1955-1956 *American Druggist Blue Book* has been released to every retail pharmacist in America. The book lists a total of 171,270 products with symbols indicating the fair trade minimum, prescription only products, narcotics, and exempt narcotics.

The Blue Book may be purchased for eight dollars per copy from: *American Druggist Blue Book,* 250 West 55th Street, New York 19, N. Y.

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PHS Internships Announced

The Public Health Service has announced one-year internship programs at three of its hospitals—Baltimore, Md.; New Orleans, La.; and Seattle, Wash. According to a recent release, the PHS program meets the Minimum Standard for Pharmacy Internships in Hospitals and offers graduate pharmacists opportunities of gaining the specialized training necessary to operate pharmaceutical services and to become drug therapy consultants to the medical staffs in today's hospitals.

Seniors in accredited "A" schools of pharmacy may apply for these internships provided they meet the requirements prior to July 1.

For qualified pharmacists, appointment to one of these internships may be the beginning of a long and satisfying career as a commissioned officer in the Nation's chief health agency—the Public Health Service. Applications may be filed after January 1 and must be received by April 1 for appointment on July 1. Forms may be obtained by addressing: The Surgeon General, Public Health Service, United States Department of Health, Education and Welfare, Washington 25, D. C. Attention: Chief, Pharmacy Branch, Division of Hospitals.

VA Residency Programs Announced

The Veterans Administration has announced two residency programs for pharmacists—one at the VA Center in Los Angeles which is being held for the third consecutive year, and one at the VA Hospital in Houston, Texas. The program offers a combination of graduate school study in an accredited school of pharmacy along with practical experience in a VA hospital. In order to be considered for training beginning with the 1955 fall semester, applications must be filed before May 10. Pharmacists interested in applying should file a Form 57 (application form) with the Executive Secretary, Central Board of U. S. Civil Service Examiners, Veterans Administration, Washington 25, D. C.

At least two years are required to complete the residency program. About half the time will be spent on duty in VA hospitals, and the remainder in graduate work at the University participating in the program. A degree of Master of Science in Pharmacy, with a major in hospital pharmacy, will be awarded by the university upon satisfactory completion of work.

Pharmacists accepted for the residency program will receive $2.02 an hour while working at the VA Center or Hospital for 28 hours a week during the course. Quarters and subsistence will be available at the hospitals for a nominal charge. Residents may pay tuition and other academic charges at the university.

Selection of residents will be by Civil Service examination, but no written tests are required. Announcements of the examination (pharmacy resident) are available at any First or Second Class Post Office. This is an amendment to Announcement No. 438 (B), for pharmacists.

PCP and Jefferson Offer Program in Hospital Pharmacy

The Philadelphia College of Pharmacy and Science, the Jefferson Medical College of Philadelphia, and the Jefferson Medical College Hospital again announce cooperative programs of residency and graduate study in hospital pharmacy administration. The continuing expansion of public and private hospital systems, increased demand for hospitalization, and other factors, have shown the need for administrative pharmacists, skilled in hospital practice, who possess specialized training, an advanced education and degree, or both.

The above institutions are making their combined facilities available to selected recent graduates of accredited Schools of Pharmacy, who will be accepted for the 1955 fall term for residency and graduate study. Graduates of these courses are eligible for gratifying professional activity as directors of pharmacy service in hospitals, with excellent financial return.

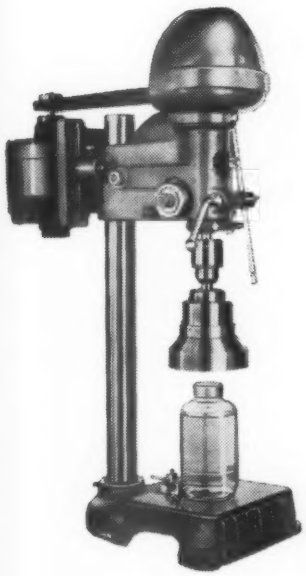
Detailed information regarding the program can be secured by writing to the Philadelphia College of Pharmacy and Science. A pamphlet entitled "Prospectus of Graduate Instruction and Resident Training in Hospital Pharmacy Administration," is available on request.

The applicant should write to Dr. Louis A. Reber, Secretary, Graduate Committee, Philadelphia College of Pharmacy and Science, 43rd Street, Kingsessing and Woodland Avenues, Philadelphia 4, Pa., for the necessary application form. This form, completed in duplicate, together with an official transcript of college work and three letters of recommendation from college Professors, should be returned as soon as possible. Applicants will be selected in order of completion of their applications.

Michigan Internship Announcement

A combined two-year program of graduate study and internship in hospital pharmacy is given cooperatively by the Graduate School, the College of Pharmacy, and the Department of Pharmacy of the University Hospital located in Ann Arbor, Michigan.

Interns devote essentially one-half time to graduate study and one-half time to hospital pharmacy training. Successful completion of the two-year program leads to the degree of Master of Science in Pharmacy, awarded by the University, and a Certificate of Hospital Pharmacy Internship granted by the Hospital. Four appli-



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cants are accepted annually, and the program begins with the opening of the fall semester of each year. During the training period, an allowance totaling approximately $150.00 per month is provided by the Hospital.

Applicants for the program must possess the Bachelor of Science degree in Pharmacy obtained from an accredited college of pharmacy, and the applicant should have essentially a "B" average. Application may be made by letter to Dean Tom Rowe, College of Pharmacy, University of Michigan, Ann Arbor. The applicant should submit an official transcript of his college record and two letters of recommendation, including one from the dean of his college.

The Johns Hopkins Hospital Internship Program

The Johns Hopkins Hospital, in cooperation with the Graduate School and the School of Pharmacy of the University of Maryland, announces that internships in pharmacy are open to a limited number of 1955 or other recent graduates of recognized schools of pharmacy. Appointments are for a period of twenty-two months beginning September 1, 1955. During twenty months interns devote one-half time to hospital pharmacy training and one-half time to graduate study. Full time training in the hospital pharmacy is required for two months during the summer of 1955. Four weeks of vacation are allowed during the term of the appointment. Upon satisfactory completion of the internship and the course of study, Master of Science degrees are conferred by the University of Maryland and Certificates of Internship are awarded by The Johns Hopkins Hospital.

A stipend of $150.00 per month is provided by the hospital. The University of Maryland makes a reduction of 25 percent in tuition fees. The full graduate tuition is $10.00 per semester hour and thirty semester hours of work are required for the Master's Degree. In addition, there is a $10.00 matriculation fee and a $10.00 diploma fee. Complete information regarding curricula appears in the catalog of the School of Pharmacy, a copy of which may be secured by sending a request to the School of Pharmacy, University of Maryland, 32 South Greene Street, Baltimore 1, Maryland.

Letters of application and other required information should be forwarded to Russell A. Nelson, M.D., Director, The Johns Hopkins Hospital, Baltimore 5, Maryland, not later than April 1, and appointments will be announced on or before May 15, 1955 .

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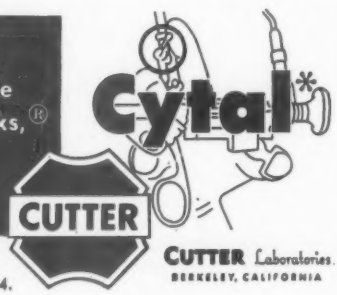

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†Schulte, et al., "Clinical Use of Cytal in Urology," Jrnl. of Urology, May 1954.

AS THE PRESIDENT SEES IT

(CONTINUED FROM PAGE 172)

New England Council of Hospital Pharmacists, Massachusetts College of Pharmacy—March 31, by American Air Line to Boston to the New England Council of Hospital Pharmacists and to the Massachusetts College of Pharmacy. The New England Council of Hospital Pharmacists has a grand two day program planned for March 31 and April 1. Hospital Pharmacists Shibel, Deeb, Canaipi, Daigle, Tyrell, Jeffrey, Lang, and, last but not least, John Murphy, the Dean of New England hospital pharmacists are listed as participants. I'm looking forward to returning to my home State for this meeting and for the opportunity of speaking to the students of the second oldest College of Pharmacy (1820), my alma mater.

Then on to Miami in early May to our final Executive Committee Meeting and the Convention.

EDUCATIONAL NUMBER OF THE BULLETIN—If all goes as planned, the next issue of THE BULLETIN will be the long awaited "Educational Number" that I spoke of in the President Elect's address last August. In it will be found the promised career brochure that should be of real value to those of you interesting senior pharmacy students in careers in hospital pharmacy. Many other fine surprises including internship material await the hospital pharmacist, the hospital administrator and the pharmaceutical educator interested in hospital pharmacy pedagogy. The Educational Number will be another Francke landmark in the literature of hospital pharmacy.

ACKNOWLEDGEMENTS—I would be remiss indeed, if I did not take this last opportunity to publicly thank each of you who have been called upon to serve in some capacity or other for the SOCIETY during this past year. Your help and counsel was most appreciated. I wish that space would allow naming each of you in order that a permanent record might be had in THE BULLETIN of your valued contributions to the SOCIETY.

To the officers elected to serve with me, Vice-President Claude Busick, soon to be our new President, and Sister Mary Berenice our Treasurer, my sincere thanks for their valued advice and help as we worked our way through 1954-1955. To Miss Niemeyer a special "thank you" for keeping me well informed on the day-to-day activities of the SOCIETY, for being patient in teaching me the duties of the President, and for making the life of this President such a pleasant one. To the EDITOR OF THE BULLETIN, Dr. Don Francke and to Dr. R. P. Fischelis of the Division of Hospital Pharmacy of the American Pharmaceutical Association and the AMERICAN SOCIETY OF HOSPITAL PHARMACISTS, my thanks for their advice and counsel. To Committee Chairmen, and Committee Members, especially Mrs. Shannon (the former Anna Thiel), Charles Towne, John Scigliano, Grover Bowles, Sister Marian and Paul Parker who carried the heavy loads of standing and executive committee activities, my sincere thanks. I ask that each member read the "Green Sheets" in detail in a forthcoming issue of THE BULLETIN and note the fine work of these folks who carried out the plans of your SOCIETY this year. No President could have asked for a finer team to assist him. Last but not least to the officers of the many local chapters, and the officials of the A.Ph.A., the American Hospital Association, the Catholic Hospital Association and the other organizations that assisted us in developing this year better national and local SOCIETY activities and better hospital pharmacy practices, my deep personal appreciation and thanks.

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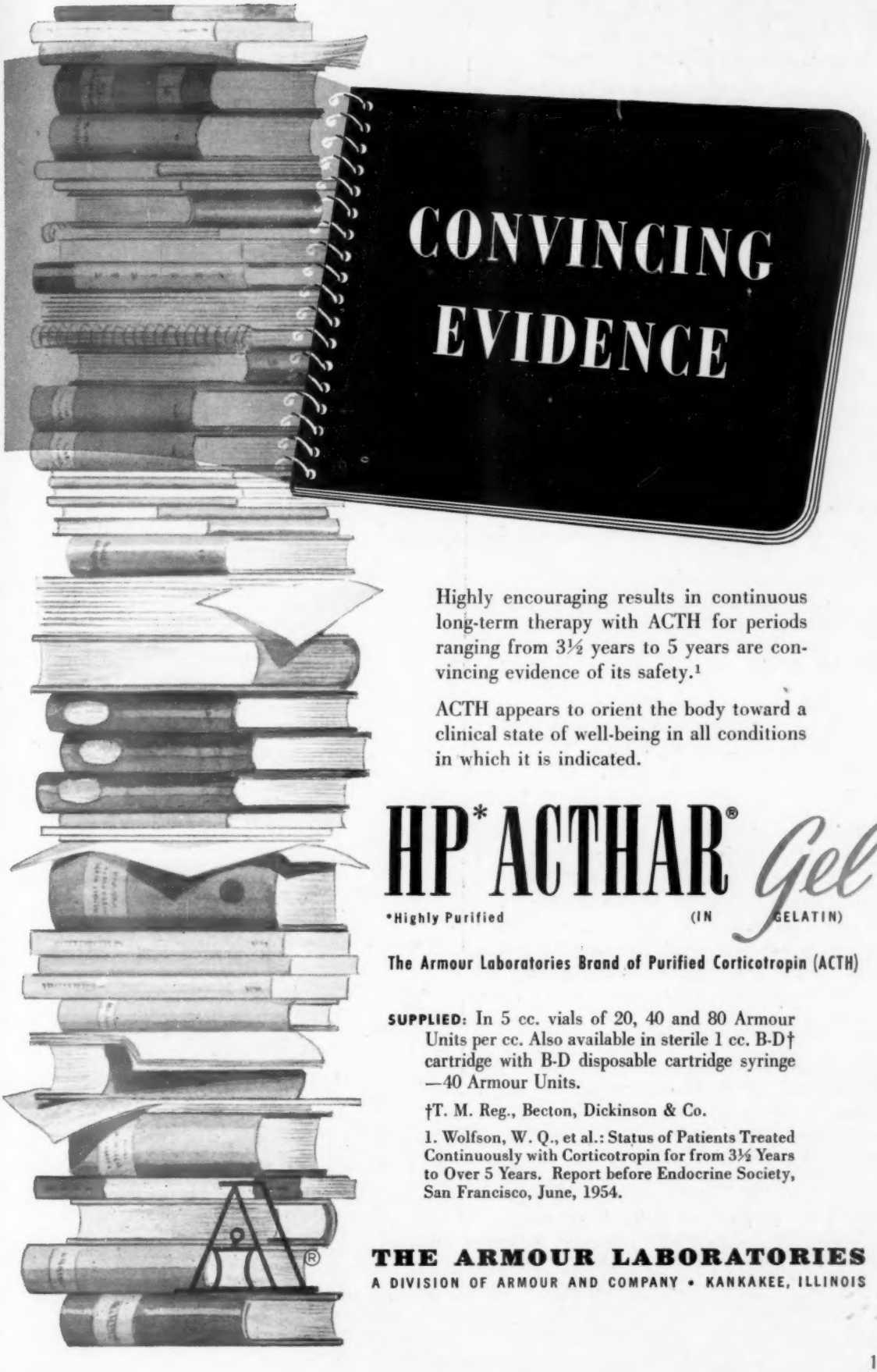

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1. Wolfson, W. Q., et al.: Status of Patients Treated Continuously with Corticotropin for from 3½ Years to Over 5 Years. Report before Endocrine Society, San Francisco, June, 1954.

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PHARMACIST graduate of the University of Toronto desires position as chief pharmacist in hospital in United States. Over 25 years experience as buyer, dispenser and executive; American citizen (born). Address replies to M. J. Isaacs, Box 370, Billings Bridge P.O., Ottawa, Ont., Canada.

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